

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 24.05.94
Test oil : ISO 4113

Combination No. : 0402648941

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0412628886

Governor
Governor design. : RQV300...950PA1033
: -13
Governor no. : 0421814094

Cust. part No. : 0240742202

Customer spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °Nw : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.49
Tolerance mm : \pm 0.15

Rated speed rpm : 1009
guide sleeve
travel mm : 8.52
Tolerance mm : \pm 0.20

Rated speed rpm : 589
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 639
guide sleeve
travel mm : 5.51
Tolerance mm : \pm 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 6.48
Tolerance mm : \pm 0.25

Rated speed rpm : 1100
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1210
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1050

Rack travel in mm : 12.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 226.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 7.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 825
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 14.40
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 10.40
Tolerance mm : \pm 0.15

Rated speed rpm : 400
rack travel mm : 12.90
Tolerance mm : \pm 0.10

rack travel mm : 11.90
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 214.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00

Rated speed rpm : 998
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.94
Test oil : ISO 4113
Combination No. : 0402646865
Injection pump
Pump designation : PE6P120A720RS7020
EP type number : 0412626828
Governor
Governor design. : RQV200...1000PA539
: -8
Governor no. : 0421813635
Cust. part No. : 1121370

Customer-spec. information
Customer : SCANIA
Motor : DS11 34

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1680750015
Outside diameter : 6.0
x inside diameter : 3.0

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x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 225

Rack travel in mm : 4.70
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1050

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

AD6

control lever
position degree : 59.0
tolerance degree : + 4.0

control lever
position degree : 117.0
tolerance degree : + 4.0

rack travel mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 9.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 225
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 6.10

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.95
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 12.95
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Rated speed rpm : 500
rack travel mm : 11.20
Tolerance mm : \pm 0.15

rack travel mm : 12.35
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50

Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 225
rack travel mm : 4.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.94
Test oil : ISO 4113
Combination No. : 0402646868
Injection pump
Pump designation : PE6P120A720RS7020
EP type number : 0412626828
Governor
Governor design. : RQ200/1000PA713-5
Governor no. : 0421801444

Cust. part No. : 1121372

Customer-spec. information
Customer : SCANIA
Motor : DS11 34

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

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REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 225

Rack travel in mm : 4.70
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 42.0
tolerance degree : + 4.0

control lever
position degree : 97.0
tolerance degree : + 4.0

rack travel mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 10.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 225
rack travel mm : 4.70
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 325
Tolerance 1/min : + 20

Rated speed rpm : 125

CRT mm min. : > 5.80

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.95
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 12.95
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : ± 0.20

Rated speed rpm : 500
rack travel mm : 11.20
Tolerance mm : ± 0.15

rack travel mm : 12.35
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.90
Rated speed rpm : 1045
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : ± 20.0

Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 225
rack travel mm : 4.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.94
Test oil : ISO 4113

Combination No. : 0402646983

Injection pump
Pump designation : PE6P120A320LS7846
EP type number : 0412626865

Governor
Governor design. : RGV300...1050PA1033
 : -2
Governor no. : 0421813994

Cust. part No. : 0230741102

Customer spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power kW : 230.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
 : 1-

Phasing : 0-60-120-180-240
 : -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.74
Tolerance mm : \pm 0.20

Rated speed rpm : 1107
guide sleeve
travel mm : 8.38
Tolerance mm : \pm 0.15

Rated speed rpm : 1640
guide sleeve
travel mm : 24.93
Tolerance mm : \pm 0.25

Rated speed rpm : 575

guide sleeve
travel mm : 4.52
Tolerance mm : \pm 0.25

Rated speed rpm : 625
guide sleeve
travel mm : 5.04
Tolerance mm : \pm 0.25

Rated speed rpm : 830
guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1290
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1160

Rack travel in mm : 11.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : \pm 4.0

rack travel mm : 12.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1170
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 7.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.00
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.55
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 13.00
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400

rack travel mm : 10.35
Tolerance mm : \pm 0.15

Rated speed rpm : 400

rack travel mm : 11.55
Tolerance mm : \pm 0.10

rack travel mm : 12.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 220

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 158.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.75
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.94

Test oil : ISO 4113

Combination No. : 0402648947

Injection pump

Pump designation : PE8P120A320LS7859

EP type number : 0412628869

Governor

Governer design. : RQ300/950PA1032-12

Governer no. : 0421801741

Cust. part No. : 0230749602

Customer-spec. information

Customer : MB-NFZ

Motor : OM442 LA

Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1688901105

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

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Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.10

Rated speed rpm : 1009
guide sleeve
travel mm : 6.35
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 410

guide sleeve
travel mm : 4.66
Tolerance mm : \pm 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1170
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : \pm 4.0

rack travel mm : 12.75
Rated speed rpm : 998
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 13.75
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 9.70
Tolerance mm : \pm 0.15

Rated speed rpm : 400

rack travel mm : 13.10
Tolerance mm : \pm 0.10

rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $>$ 220
Check
speed 1/min : $>$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.75
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.94
Test oil : ISO 4113

Combination No. : 0402648948

Injection pump
Pump designation : PE8P120A320LS7859
EP type number : 0412628869

Governor
Governor design. : RQ300/1050PA1030-17
Governor no. : 0421801742

Cust. part No. : 0230749802

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power kW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

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Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3
 : -5-4-1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.79
Tolerance mm : + 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.69
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.35
Tolerance mm : + 0.10

Rated speed rpm : 622

guide sleeve
travel mm : 6.09
Tolerance mm : + 0.10

Rated speed rpm : 411
guide sleeve
travel mm : 4.44
Tolerance mm : + 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

Rated speed rpm : 727
guide sleeve
travel mm : 6.26
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : + 4.0

rack travel mm : 12.60
Rated speed rpm : 1098
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 20

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 13.75
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 9.70

Tolerance mm : \pm 0.15

Rated speed rpm : 400

rack travel mm : 13.10
Tolerance mm : \pm 0.10

rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 220

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 210.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.94
Test oil : ISO 4113

Combination No. : 0402648953

Injection pump
Pump designation : PE8P120A320LS7859
EP type number : 0412628869

Governor
Governor design. : RQV300...950PA1033
: -10
Governor no. : 0421814040

Cust. part No. : 0230749702

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : \pm 0.20

Rated speed rpm : 1009
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.15

Rated speed rpm : 1570
guide sleeve
travel mm : 24.56
Tolerance mm : \pm 0.25

Rated speed rpm : 567

guide sleeve
travel mm : 4.66
Tolerance mm : \pm 0.25

Rated speed rpm : 617
guide sleeve
travel mm : 5.23
Tolerance mm : \pm 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 6.31
Tolerance mm : \pm 0.25

Rated speed rpm : 1092
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1050

Rack travel in mm : 12.60
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : \pm 4.0

rack travel mm : 12.75
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 86.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 13.75
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400

rack travel mm : 13.10
Tolerance mm : \pm 0.10

rack travel mm : 9.70
Tolerance mm : \pm 0.15

rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 220

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 210.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.75
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.94

Test oil : ISO 4113

Combination No. : 0402648954

Injection pump

Pump designation : PE8P120A320LS7859

EP type number : 0412628869

Governor

Governor design. : RQ300/1050PA1031-8

Governor no. : 0421801674

Cust. part No. : 0230749902

Customer-spec. information

Customer : MB-NFZ

Motor : OM442 LA

Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 75

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1688901105

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

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Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.81
Tolerance mm : \pm 0.10

Rated speed rpm : 1103
guide sleeve
travel mm : 6.70
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.35
Tolerance mm : \pm 0.10

Rated speed rpm : 622

guide sleeve
travel mm : 6.09
Tolerance mm : \pm 0.10

Rated speed rpm : 401
guide sleeve
travel mm : 4.16
Tolerance mm : \pm 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 727
guide sleeve
travel mm : 6.26
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : \pm 4.0

rack travel mm : 12.60
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 7.40

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 13.75
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 9.70

Tolerance mm : \pm 0.15

Rated speed rpm : 400

rack travel mm : 13.10
Tolerance mm : \pm 0.10

rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 220

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 210.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.94
Test oil : ISO 4113

Combination No. : 0402648955

Injection pump
Pump designation : PE8P120A320LS7859
EP type number : 0412628869

Governor
Governor design. : RQ300/950PA1031-9
Governor no. : 0421801675

Cust. part No. : 0240740502

Customer spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 1.0

Overflow quantity
min. l/h : 75
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 13.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.18
Tolerance mm : \pm 0.10

Rated speed rpm : 1004
guide sleeve
travel mm : 6.36
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 399

guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1170
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : \pm 4.0

rack travel mm : 12.75
Rated speed rpm : 998
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 7.50

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 400
rack travel mm : 13.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
rack travel mm : 13.75
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
rack travel mm : 9.70
Tolerance mm : \pm 0.15

Rated speed rpm : 400

rack travel mm : 13.10
Tolerance mm : \pm 0.10

rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.75
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.94
Test oil : ISO 4113

Combination No. : 0402744800

Injection pump
Pump designation : PES4P120A320RS7312
EP type number : 0412724800

Governor
Governor design. : RGV400...1200PA1115
: -1K
Governor no. : 0421815406

Cust. part No. : 51.11103-7295

Customer spec. information
Customer : MAN
Motor : D0824LFL02
Power KW : 116.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750008

807

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 213.0

| | |
|-------------------|----------|
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 4.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |
| 2nd speed rpm | : 400 |
| Rack travel in mm | : 4.70 |
| Tolerance mm | : + 0.20 |
| Del. quantity | |
| cm3/1000 strokes | : 22.0 |
| Tolerance | |
| cm3/1000 strokes | : + 3.0 |
| Check tolerance | |
| cm3/1000S. | : + 6.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-----------------|----------|
| Rated speed rpm | : 400 |
| guide sleeve | |
| travel mm | : 3.06 |
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 1256 |
| guide sleeve | |
| travel mm | : 10.49 |
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 869 |
| guide sleeve | |
| travel mm | : 7.12 |
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 380 |
| guide sleeve | |
| travel mm | : 2.52 |
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 430 |
| guide sleeve | |
| travel mm | : 3.23 |

| | |
|-----------------|----------|
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 530 |
| guide sleeve | |
| travel mm | : 4.25 |
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 1500 |
| guide sleeve | |
| travel mm | : 13.50 |
| Tolerance mm | : + 0.50 |

GUIDE SLEEVE POSITION

| | |
|-------------------|----------|
| Rated speed rpm | : 1370 |
| Rack travel in mm | : 9.00 |
| Tolerance mm | : + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|---------|
| Rated speed rpm | : 1150 |
| Del. quantity | |
| cm3/1000 strokes | : 213.0 |
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 4.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |

RATED SPEED

| | |
|------------------|----------|
| control lever | |
| position degree | : 121.0 |
| tolerance degree | : + 4.0 |
| rack travel mm | : 13.80 |
| Rated speed rpm | : 1250 |
| Tolerance 1/min | : + 5 |
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1385 |
| Tolerance 1/min | : + 15 |
| rack travel mm | : 0.50 |
| Tolerance mm | : + 0.50 |
| Rated speed rpm | : 1520 |

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 325
CRT mm min. : $>$ 7.50

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
rack travel mm : 14.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1150
rack travel mm : 13.10
Tolerance mm : \pm 0.15
rack travel mm : 9.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $<$ 280
Check
speed 1/min : $<$ 260
Rated speed rpm : $>$ 320
Check
speed 1/min : $>$ 340

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 211.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.80
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 13.10.93
Test oil : ISO 4113

Combination No. : 0402646641

Injection pump
Pump designation : PE6P120A320RS7230
EP type number : 0412626843

Governor
Governor design. : RQ750PA1102
Governor no. : 0421801697

Cust. part No. : 809/199

Customer-spec. information
Customer : DORMAN
Motor : WS 315 L
Power kW : 315.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 274.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 758
guide sleeve
travel mm : 5.10
Tolerance mm : \pm 0.25

Rated speed rpm : 801
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.00
Tolerance mm : \pm 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 90.0
tolerance degree : \pm 4.0

rack travel mm : 12.40
Rated speed rpm : 750
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 784
Tolerance 1/min : \pm 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 750
Tolerance 1/min : \pm 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.09.94
Test oil : ISO 4113

Combination No. : 0402648967

Injection pump
Pump designation : PE8P120A320LS7871
EP type number : 0412628877

Governor
Governor design. : RQV300...1050PA1078
 : -1K
Governor no. : 0421815361

Cust. part No. : 9275447

Customer spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power KW : 400.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 277.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

| | |
|---------------------|--------|
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 5.0 |
| Check tolerance | |
| cm3/1000S. : | 9.0 |
| 2nd speed rpm : | 300 |
| Rack travel in mm : | 5.40 |
| Tolerance mm : | + 0.10 |
| Del. quantity | |
| cm3/1000 strokes : | 23.0 |
| Tolerance | |
| cm3/1000 strokes : | + 3.0 |
| Check tolerance | |
| cm3/1000S. : | + 6.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 6.0 |
| Check tolerance | |
| cm3/1000S. : | 10.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-------------------|--------|
| Rated speed rpm : | 300 |
| guide sleeve | |
| travel mm : | 1.69 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 1117 |
| guide sleeve | |
| travel mm : | 10.38 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 746 |
| guide sleeve | |
| travel mm : | 6.20 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 353 |
| guide sleeve | |
| travel mm : | 2.45 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 403 |
| guide sleeve | |
| travel mm : | 3.18 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 450 |
| guide sleeve | |
| travel mm : | 3.66 |
| Tolerance mm : | + 0.25 |

| | |
|-------------------|--------|
| Rated speed rpm : | 1320 |
| guide sleeve | |
| travel mm : | 13.50 |
| Tolerance mm : | + 0.50 |

GUIDE SLEEVE POSITION

| | |
|---------------------|--------|
| Rated speed rpm : | 1185 |
| Rack travel in mm : | 10.80 |
| Tolerance mm : | + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--------------------|-------|
| Rated speed rpm : | 1050 |
| Del. quantity | |
| cm3/1000 strokes : | 277.5 |
| Tolerance | |
| cm3/1000 strokes : | + 1.0 |
| Check tolerance | |
| cm3/1000S. : | + 4.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 5.0 |
| Check tolerance | |
| cm3/1000S. : | 9.0 |

RATED SPEED

| | |
|--------------------|--------|
| control lever | |
| position degree : | 121.0 |
| tolerance degree : | + 4.0 |
| rack travel mm : | 10.85 |
| Rated speed rpm : | 1105 |
| Tolerance 1/min : | + 5 |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 1185 |
| Tolerance 1/min : | + 15 |
| rack travel mm : | 0.50 |
| Tolerance mm : | + 0.50 |
| Rated speed rpm : | 1300 |

LOW IDLE

| | |
|--------------------|-------|
| control lever | |
| position degree : | 74.0 |
| tolerance degree : | + 4.0 |

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 7.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 9.75
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 10.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1050
rack travel mm : 9.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 11.00
Tolerance mm : \pm 0.05

rack travel mm : 9.65
Tolerance mm : \pm 0.10

B15

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 294.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 267.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 247.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1105
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.09.94
Test oil : ISO 4113

Combination No. : 0402648967A

Injection pump
Pump designation : PE8P120A320LS7871
EP type number : 0412628877

Governor
Governor design. : RQV300...1050PA1078
 : -1K
Governor no. : 0421815361

Cust. part No. : 9275447

Customer spec. information
Customer : LIEBHERR
Motor : D 9408 TI
Power kW : 400.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

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Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

| | |
|---------------------|--------|
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 5.0 |
| Check tolerance | |
| cm3/1000S. : | 9.0 |
| 2nd speed rpm : | 300 |
| Rack travel in mm : | 5.40 |
| Tolerance mm : | + 0.10 |
| Del. quantity | |
| cm3/1000 strokes : | 23.0 |
| Tolerance | |
| cm3/1000 strokes : | + 3.0 |
| Check tolerance | |
| cm3/1000S. : | + 6.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 6.0 |
| Check tolerance | |
| cm3/1000S. : | 10.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-------------------|--------|
| Rated speed rpm : | 300 |
| guide sleeve | |
| travel mm : | 1.69 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 1117 |
| guide sleeve | |
| travel mm : | 10.38 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 746 |
| guide sleeve | |
| travel mm : | 6.20 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 353 |
| guide sleeve | |
| travel mm : | 2.45 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 403 |
| guide sleeve | |
| travel mm : | 3.18 |
| Tolerance mm : | + 0.25 |
| Rated speed rpm : | 450 |
| guide sleeve | |
| travel mm : | 3.66 |
| Tolerance mm : | + 0.25 |

| | |
|-------------------|--------|
| Rated speed rpm : | 1320 |
| guide sleeve | |
| travel mm : | 13.50 |
| Tolerance mm : | + 0.50 |

GUIDE SLEEVE POSITION

| | |
|---------------------|--------|
| Rated speed rpm : | 1185 |
| Rack travel in mm : | 10.80 |
| Tolerance mm : | + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--------------------|-------|
| Rated speed rpm : | 1050 |
| Del. quantity | |
| cm3/1000 strokes : | 277.5 |
| Tolerance | |
| cm3/1000 strokes : | + 1.0 |
| Check tolerance | |
| cm3/1000S. : | + 4.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 5.0 |
| Check tolerance | |
| cm3/1000S. : | 9.0 |

RATED SPEED

| | |
|--------------------|--------|
| control lever | |
| position degree : | 121.0 |
| tolerance degree : | + 4.0 |
| rack travel mm : | 10.85 |
| Rated speed rpm : | 1105 |
| Tolerance 1/min : | + 5 |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 1185 |
| Tolerance 1/min : | + 15 |
| rack travel mm : | 0.50 |
| Tolerance mm : | + 0.50 |
| Rated speed rpm : | 1300 |

LOW IDLE

| | |
|--------------------|-------|
| control lever | |
| position degree : | 74.0 |
| tolerance degree : | + 4.0 |

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 7.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 9.75
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 10.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1050
rack travel mm : 9.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 11.00
Tolerance mm : \pm 0.05

rack travel mm : 9.65
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 294.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 267.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 247.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1105
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 13.09.94

Test oil : ISO 4113

Combination No. : 0402648977

Injection pump

Pump designation : PE8P120A520LS7818-2

EP type number : 0412628887

Governor

Governor design. : RGV300...1150PA1039

: -2K

Governor no. : 0421815316

Cust. part No. : 3-7224

Customer-spec. information

Customer : MAN

Motor : D2848LE401

Power KW : 500.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Test nozzle holde
assembly

: 1688901019

Opening pressure
bar

: 208.5

Tolerance bar : + 1.5

Lube oil : 1409918004

Test lines : 1680750075

B21

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : + 1.0

Prestroke mm : 4.55

Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : + 0.30

Check

tolerance °Nw : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.40

Tolerance mm : + 0.05

Del. quantity

cm³/1000 strokes : 330.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.24
Tolerance mm : + 0.25

Rated speed rpm : 1206
guide sleeve
travel mm : 10.42
Tolerance mm : + 0.25

Rated speed rpm : 795
guide sleeve
travel mm : 6.88
Tolerance mm : + 0.25

Rated speed rpm : 329
guide sleeve
travel mm : 2.75
Tolerance mm : + 0.25

Rated speed rpm : 379
guide sleeve
travel mm : 3.53
Tolerance mm : + 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 4.21
Tolerance mm : + 0.25

Rated speed rpm : 1450
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1280

Rack travel in mm : 13.40
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 330.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : + 4.0

rack travel mm : 13.40
Rated speed rpm : 1195
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 77.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.10
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 8.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
rack travel mm : 14.40
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1150
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1150
rack travel mm : 12.40
Tolerance mm : \pm 0.15

rack travel mm : 10.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 200
Rated speed rpm : $<$ 240
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 302.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1195
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.94
Test oil : ISO 4113
Combination No. : 0402649814
Injection pump
Pump designation : PE10P120A520LS7831
EP type number : 0412629806

Governor
Governor design. : RQ300/950PA950-1
Governor no. : 0421801651

Cust. part No. : 3-7222

Customer-spec. information

Customer : MAN
Motor : D 2840 LF 06
Power kW : 368.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

B24

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50
Tolerance mm : ± 0.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 10

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.35

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 224.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.10
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.57
Tolerance mm : \pm 0.10

Rated speed rpm : 1009
guide sleeve
travel mm : 6.36
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 397
guide sleeve
travel mm : 3.94
Tolerance mm : \pm 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1130
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600
Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 277.0
tolerance degree : \pm 4.0

rack travel mm : 12.30
Rated speed rpm : 1003
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1055
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 253.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 380
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 6.60

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 8.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 13.35
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Rated speed rpm : 500

rack travel mm : 12.65
Tolerance mm : \pm 0.15

rack travel mm : 11.05
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 240
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 222.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1003
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

| | | |
|-------------------------------|---|--------|
| Rated speed rpm | : | 300 |
| rack travel mm | : | 5.10 |
| Tolerance mm | : | + 0.20 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 17.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | + 3.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | + 6.0 |
| Spreed | | |
| Tolerance | | |
| cm ³ /1000 strokes | : | 8.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | 12.0 |

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.94

Test oil : ISO 4113

Combination No. : 0402649815

Injection pump

Pump designation : PE10P120A520LS7831

EP type number : 0412629806

Governor

Governer design. : RGV300...950PA949-1

Governer no. : 0421813998

Cust. part No. : 3-7223

Customer-spec. information

Customer : MAN

Motor : D 2840 LF 06

Power KW : 368.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde assembly

: 1688901019

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.05

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.50

Tolerance mm : ± 0.50

Firing order : 10- 9- 4- 1- 8

: - 7- 6- 3- 5

: - 2

Phasing : 0-45-72-117-144

: -189-216-261-288

: -333

Tolerance : ± 0.30

Check tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 10

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.35

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 224.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.10
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1060

Rack travel in mm : 12.30
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 224.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : \pm 4.0

rack travel mm : 12.30
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1060
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 6.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.35
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 8.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 13.35
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.65
Tolerance mm : \pm 0.15

rack travel mm : 11.05
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 240
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 222.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 05.10.94
Test oil : ISO 4113
Combination No. : 0402735812
Injection pump
Pump designation : PES5P120A720/3LS7250
: -1
EP type number : 0412725819
Governor
Governor design. : RQV325...1000PA962
: -6K
Governor no. : 0421815301
Cust. part No. : 51.11103-7323

Customer spec. information
Customer : MAN
Motor : D2865LFD6/LUD6
Power KW : 235.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance *NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Tolerance
cm³/1000 strokes : \pm 8.0

Check tolerance
cm³/1000S. : \pm 14.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 900

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

2nd speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.20

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 2.42
Tolerance mm : \pm 0.25

Rated speed rpm : 1055

guide sleeve
travel mm : 8.93
Tolerance mm : \pm 0.25

Rated speed rpm : 810
guide sleeve
travel mm : 6.08
Tolerance mm : \pm 0.25

Rated speed rpm : 352
guide sleeve
travel mm : 3.13
Tolerance mm : \pm 0.25

Rated speed rpm : 402
guide sleeve
travel mm : 3.98
Tolerance mm : \pm 0.25

Rated speed rpm : 510
guide sleeve
travel mm : 4.42
Tolerance mm : \pm 0.25

Rated speed rpm : 1198
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1290
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 11.20
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

RATED SPEED

control lever
position degree : 292.0
tolerance degree : ± 4.0

rack travel mm : 11.20
Rated speed rpm : 1045
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 246.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 395

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.45
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 12.10
Tolerance mm : ± 0.10

C05

Rated speed rpm : 650
rack travel mm : 5.50
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 11.25
Tolerance mm : ± 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.45
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900
rack travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 900
Pressure hPa : 600
rack travel mm : 11.45
Tolerance mm : ± 0.15

Pressure hPa : 170
rack travel mm : 8.75
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 14.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 246.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0

C06

Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.09.94
Test oil : ISO 4113

Combination No. : 0402735813

Injection pump
Pump designation : PES5P120A720/3LS7250
: -1
EP type number : 0412725819

Governor
Governor design. : RGV325...1000PA960
: -9K
Governor no. : 0421815309

Cust. part No. : 51.11103-7339

Customer-spec. information
Customer : MAN
Motor : D2865LFD6/LU06
Power Kw : 235.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

BASIC SETTING

| | |
|--|--------------|
| Rated speed rpm | : 700 |
| Rack travel in mm | : 5.00 |
| Tolerance mm | : \pm 0.10 |
| Tolerance cm ³ /1000 strokes | : \pm 8.0 |
| Check tolerance cm ³ /1000S. | : \pm 14.0 |
| Speed | |
| Tolerance cm ³ /1000 strokes | : 3.5 |
| Check tolerance cm ³ /1000S. | : 8.0 |
| Rated speed rpm | : 900 |
| Rack travel in mm | : 12.25 |
| Tolerance mm | : \pm 0.05 |
| Del. quantity cm ³ /1000 strokes | : 261.0 |
| Tolerance cm ³ /1000 strokes | : \pm 1.0 |
| Check tolerance cm ³ /1000S. | : \pm 4.0 |
| Speed | |
| Tolerance cm ³ /1000 strokes | : 10.0 |
| Check tolerance cm ³ /1000S. | : 14.0 |
| 2nd speed rpm | : 325 |
| Rack travel in mm | : 5.00 |
| Tolerance mm | : \pm 0.20 |
| Del. quantity cm ³ /1000 strokes | : 50.0 |
| Tolerance cm ³ /1000 strokes | : \pm 3.0 |
| Check tolerance cm ³ /1000S. | : \pm 6.0 |
| Speed | |
| Tolerance cm ³ /1000 strokes | : 8.0 |
| Check tolerance cm ³ /1000S. | : 12.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|---------------------------|--------------|
| Rated speed rpm | : 325 |
| guide sleeve travel mm | : 2.66 |
| Tolerance mm | : \pm 0.25 |
| Rated speed rpm | : 1058 |
| guide sleeve travel mm | : 10.58 |
| Tolerance mm | : \pm 0.25 |
| Rated speed rpm | : 741 |
| guide sleeve travel mm | : 6.99 |
| Tolerance mm | : \pm 0.25 |
| Rated speed rpm | : 260 |
| guide sleeve travel mm | : 2.01 |
| Tolerance mm | : \pm 0.25 |
| Rated speed rpm | : 310 |
| guide sleeve travel mm | : 2.58 |
| Tolerance mm | : \pm 0.25 |
| Rated speed rpm | : 430 |
| guide sleeve travel mm | : 3.71 |
| Tolerance mm | : \pm 0.25 |
| Rated speed rpm | : 1260 |
| guide sleeve travel mm | : 13.50 |
| Tolerance mm | : \pm 0.50 |

GUIDE SLEEVE POSITION

| | |
|----------------------------------|--------------|
| control lever position degree | : - 1 |
| Rated speed rpm | : 1115 |
| Rack travel in mm | : 11.10 |
| Tolerance mm | : \pm 2.00 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--|---------|
| Rated speed rpm | : 900 |
| Aneroid pressure hPa | : 1200 |
| Del. quantity cm ³ /1000 strokes | : 261.0 |

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

RATED SPEED

control lever
position degree : 297.0
tolerance degree : + 4.0

rack travel mm : 11.10
Rated speed rpm : 1045
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 252.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 225

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 305

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.10
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 11.90
Tolerance mm : + 0.10

Rated speed rpm : 650
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 11.25
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.25
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 900
rack travel mm : 8.20
Tolerance mm : + 0.10

Rated speed rpm : 900

Pressure hPa : 600
rack travel mm : 11.00
Tolerance mm : + 0.15

Pressure hPa : 170
rack travel mm : 8.55
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 270
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700

Tolerance
 cm³/1000 strokes : \pm 8.0
 Check tolerance
 cm³/1000S. : \pm 14.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 248.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 650
 Del. quantity
 cm³/1000 strokes : 275.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Rated speed rpm : 650
 Del. quantity
 cm³/1000 strokes : 95.0
 Tolerance
 cm³/1000 strokes : \pm 5.0
 Check tolerance
 cm³/1000S. : \pm 8.0

Spreed
 Tolerance
 cm³/1000 strokes : 10.0

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 160.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10
 Rated speed rpm : 1045
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
 cm³/1000 strokes : 190.0
 Tolerance
 cm³/1000 strokes : \pm 10.0
 Check tolerance
 cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
 rack travel mm : 5.00
 Tolerance mm : \pm 0.20
 Del. quantity
 cm³/1000 strokes : 50.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.09.94
Test oil : ISO 4113
Combination No. : 0402735816
Injection pump
Pump designation : PES5P120A720/3LS7310
: -1
EP type number : 0412725820
Governor
Governor design. : RQ325/1000PA1106-1
Governor no. : 0421801700

Cust. part No. : 51.11103-7391

Customer spec. information
Customer : MAN
Motor : D2865LUH06
Power kW : 191.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 20.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.80
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5
S.o.d. blocking
Barrel no. : 5

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.80

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 43.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 2.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1071
guide sleeve
travel mm : 7.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.01
Tolerance mm : \pm 0.10

Rated speed rpm : 777
guide sleeve
travel mm : 7.01
Tolerance mm : \pm 0.10

Rated speed rpm : 408
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700
Rack travel in mm : 15.50
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : \pm 4.0

rack travel mm : 11.10
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 10.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 8.75
Tolerance mm : \pm 0.05

Pressure hPa : 2000
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 1000

C13

rack travel mm : 11.05
Tolerance mm : \pm 0.10

Pressure hPa : 500
rack travel mm : 10.05
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.08.94

Test oil : ISO 4113

Combination No. : 0402648930

Injection pump

Pump designation : PE8P120A320LS7847-3

EP type number : 0412628886

Governor

Governer design. : RQ300/1050PA1031-13

Governer no. : 0421801719

Cust. part No. : 0230741502

Customer-spec. information

Customer : MB-NFZ

Motor : OM402 LA

Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1688901105

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.83
Tolerance mm : \pm 0.10

Rated speed rpm : 1109
guide sleeve
travel mm : 6.84
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 734

guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.10

Rated speed rpm : 441
guide sleeve
travel mm : 4.54
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 831
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 239.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 1098

Tolerance 1/min : \pm 8
 rack travel mm : 4.00
 Rated speed rpm : 1195
 Tolerance 1/min : \pm 15
 rack travel mm : 0.75
 Tolerance mm : \pm 0.75
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.30
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 345
 Tolerance 1/min : \pm 20

Rated speed rpm : 200
 CRT mm min. : $>$ 5.00

TORQUE CONTROL

Rated speed rpm : 550
 rack travel mm : 14.80
 Tolerance mm : \pm 0.05

Rated speed rpm : 1050
 rack travel mm : 14.05
 Tolerance mm : \pm 0.10

Rated speed rpm : 950
 rack travel mm : 14.20
 Tolerance mm : \pm 0.10

Rated speed rpm : 775
 rack travel mm : 14.80
 Tolerance mm : \pm 0.10

Rated speed rpm : 400
 rack travel mm : 12.90
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
 Pressure hPa : 1200
 rack travel mm : 14.80
 Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 400
 rack travel mm : 10.60
 Tolerance mm : \pm 0.15

Rated speed rpm : 400
 Pressure hPa : 450
 rack travel mm : 12.90
 Tolerance mm : \pm 0.10

Pressure hPa : 300
 rack travel mm : 11.90
 Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 100
 Check
 speed 1/min : $>$ 80
 Rated speed rpm : $<$ 220
 Check
 speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 1050
 Del. quantity
 cm³/1000 strokes : 212.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : 450
 Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 166.0
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 4.5

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1098
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.94
Test oil : ISO 4113

Combination No. : 0402735805

Injection pump
Pump designation : PES5P120A720/3LS7250
EP type number : 0412725809

Governor
Governor design. : RQV325...1000PA962
 : -6K
Governor no. : 0421815301

Cust. part No. : 3-7202

Customer spec. information
Customer : MAN
Motor : D2865LFD6/LU06
Power KW : 235.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Tolerance
cm³/1000 strokes : \pm 8.0

Check tolerance
cm³/1000S. : \pm 14.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 900

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

2nd speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 11.20
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

RATED SPEED

control lever
position degree : 292.0
tolerance degree : \pm 4.0

rack travel mm : 11.20
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 246.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : $>$ 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 395

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.25
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.45
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 900
rack travel mm : 8.40
Tolerance mm : \pm 0.10

Rated speed rpm : 900

Pressure hPa : 600
rack travel mm : 11.45
Tolerance mm : \pm 0.15

Pressure hPa : 170
rack travel mm : 8.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 14.0

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 246.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 160.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 11.20

Rated speed rpm : 1045

Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : ± 10.0

Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350

rack travel mm : 5.00

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.94
Test oil : ISO 4113

Combination No. : 0402735807

Injection pump
Pump designation : PES5P120A720/3LS7250
EP type number : 0412725809

Governor
Governor design. : RQV325...1000PA960
 : -9K
Governor no. : 0421815309

Cust. part No. : 3-7203

Customer spec. information
Customer : MAN
Motor : D2865LF06/LU06
Power KW : 235.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

C23

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Tolerance
cm³/1000 strokes : \pm 8.0

Check tolerance
cm³/1000S. : \pm 14.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 900

Rack travel in mm : 12.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 261.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

2nd speed rpm : 325

Rack travel in mm : 5.00
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1115

Rack travel in mm : 11.10
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

RATED SPEED

control lever
position degree : 297.0
tolerance degree : \pm 4.0

rack travel mm : 11.10
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 252.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 225
CRT mm min. : $>$ 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 305

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.25
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 900
rack travel mm : 8.20
Tolerance mm : \pm 0.10

Rated speed rpm : 900

Pressure hPa : 600
rack travel mm : 11.00
Tolerance mm : \pm 0.15

Pressure hPa : 170
rack travel mm : 8.55
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 14.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 248.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
Tolerance
cm³/1000 strokes : 10.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.10.94
Test oil : ISO 4113

Combination No. : 0402735810

Injection pump
Pump designation : PES5P120A720/3LS7310
EP type number : 0412725817

Governor
Governor design. : RQ325/1000PA1106-1
Governor no. : 0421801700

Cust. part No. : 3-7324

Customer-spec. information
Customer : MAN
Motor : D2865LUH06
Power KW : 191.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.80
Tolerance mm : ± 0.50

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 5
S.o.d. blocking
Barrel no. : 5

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.80

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 325

Rack travel in mm : 4.90
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 43.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 2.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1071
guide sleeve
travel mm : 7.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.01
Tolerance mm : \pm 0.10

Rated speed rpm : 777
guide sleeve
travel mm : 7.01
Tolerance mm : \pm 0.10

Rated speed rpm : 408
guide sleeve
travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 530
guide sleeve
travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 700

Rack travel in mm : 15.50
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 100.0
tolerance degree : \pm 4.0

rack travel mm : 11.10
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1130
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 10.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 8.75
Tolerance mm : \pm 0.05

Pressure hPa : 2000
rack travel mm : 12.10
Tolerance mm : \pm 0.05

Pressure hPa : 1000

001

rack travel mm : 11.05
Tolerance mm : \pm 0.10

Pressure hPa : 500
rack travel mm : 10.05
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1053
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

| | | |
|-------------------------------|---|--------|
| Rated speed rpm | : | 325 |
| rack travel mm | : | 4.90 |
| Tolerance mm | : | + 0.20 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 43.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | + 3.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | + 6.0 |
| Speed | | |
| Tolerance | | |
| cm ³ /1000 strokes | : | 8.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | 12.0 |

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113
Combination No. : 0402736845
Injection pump
Pump designation : PES6P120A120RS7286
EP type number : 0412726894
Governor
Governor design. : RQV350...1100PA964
 : -20K
Governor no. : 0421815352
Cust. part No. : 3922425

Customer spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413086
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1688901103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 4.00
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 15.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 243.5
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 243.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 119.0
tolerance degree : + 6.0

rack travel mm : 13.60
Rated speed rpm : 1255
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1400
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.60
Tolerance mm : + 0.20

Rated speed rpm : 275
CRT mm min. : > 8.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 15.25
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 13.40
Tolerance mm : + 0.20

Rated speed rpm : 1200
rack travel mm : 14.70
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 15.25
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 9.20
Tolerance mm : + 0.20

Rated speed rpm : 1100

Pressure hPa : 715
rack travel mm : 13.80
Tolerance mm : + 0.20

Pressure hPa : 335
rack travel mm : 10.95
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 290
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 211.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.60
Rated speed rpm : 1255
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 180.0

Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.10.94
Test oil : ISO 4113
Combination No. : 0402736851
Injection pump
Pump designation : PES6P120A120RS7332
EP type number : 0412726909

Governor
Governor design. : RQV350...1000PA964
Governor no. : 0421815411

Cust. part No. : 3927924

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 205.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413086

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1688901103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 4.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 15.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : ± 6.0

rack travel mm : 13.50
Rated speed rpm : 1155
Tolerance 1/min : ± 15

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 6.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 275

CRT mm min. : > 8.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 15.15
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 13.70
Tolerance mm : ± 0.20

Rated speed rpm : 1100
rack travel mm : 14.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 1000
Pressure hPa : 825
rack travel mm : 13.50
Tolerance mm : ± 0.20

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 290
Check
speed 1/min : < 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 210.5
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1155
Tolerance 1/min : ± 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.11.94
Test oil : ISO 4113

Combination No. : 0400246090

Injection pump
Pump designation : PE6A75D320RS1035Z
EP type number : 0410276967

Governor
Governor design. : RQ250/1150AB143DR
Governor no. : 0420203034

Cust. part No. :

Customer spec. information
Customer : KHD
Motor : F6L613

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

D09

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-75-120-195-240
: -315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 71.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

2nd speed rpm : 250

Rack travel in mm : 7.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 10.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 500

Rack travel in mm : 16.00
Tolerance mm : + 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 71.5

Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.0

Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1183
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

Testing:

rack travel mm : 2.00
Rated speed rpm : 315
Tolerance 1/min : + 20

Rated speed rpm : 100

CRT mm min. : > 7.50

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 13.45
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 14.55
Tolerance mm : + 0.05

Rated speed rpm : 790
rack travel mm : 14.40
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 13.90
Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 77.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 2.5

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 74.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.5

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 1183
Tolerance 1/min : ± 8

LOW IDLE

Rated speed rpm : 250
rack travel mm : 7.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113
Combination No. : 0400876397
Injection pump
Pump designation : PES6A95D410RS2797
EP type number : 0410896900
Governor
Governor design. : RSV350...1400A0C2006
: -8L
Governor no. : 0420232580
Cust. part No. :

Customer spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 100.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.25
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380
Rack travel in mm : 10.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 111.0
tolerance degree : ± 4.0

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350

rack travel mm : 8.10
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1380
rack travel mm : 10.15
Tolerance mm : ± 0.05

Rated speed rpm : 400
rack travel mm : 11.45
Tolerance mm : ± 0.15

Rated speed rpm : 630
rack travel mm : 11.05
Tolerance mm : ± 0.15

Rated speed rpm : 925
rack travel mm : 10.55
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 630
Del. quantity
cm³/1000 strokes : 51.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 925
Del. quantity
cm³/1000 strokes : 59.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.94
Test oil : ISO 4113
Combination No. : 0401876762
Injection pump
Pump designation : PE6P120A320RS3206
EP type number : 0411826773
Governor
Governor design. : RSV250...900P4A374
: -7
Governor no. : 0421833284
Cust. part No. : 863094 P03

Customer spec. information
Customer : VOLVO-PENTA
Motor : TMD 122 A (HD)
Power KW : 236.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 8.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 9.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 213.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 213.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 57.0
tolerance degree : + 4.0

control lever
position degree : 107.0
tolerance degree : + 4.0

rack travel mm : 8.95
Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 980
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1130

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + 4.0

control lever
position degree : 29.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 4.60

Testing:

Rated speed rpm : 250
rack travel mm : 5.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : + 30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1000
rack travel mm : 9.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 700
rack travel mm : 8.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700

Pressure hPa : 570
rack travel mm : 0.80
Tolerance mm : \pm 0.15

Pressure hPa : 460
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 8.95
Rated speed rpm : 930
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : \pm 0.50

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.94
Test oil : ISO 4113

Combination No. : 0401876805

Injection pump
Pump designation : PE6P12DA32DRS3343
EP type number : 0411826813

Governor
Governor design. : RSV350...1100P1A559
Governor no. : 0421833389

Cust. part No. : 1372022

Customer spec. information
Customer : SCANIA
Motor : DSC945A

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x Length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per valves _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 216.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 40.0
tolerance degree : + 4.0

control lever
position degree : 90.0
tolerance degree : + 4.0

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.05
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 12.65
Tolerance mm : + 0.15

Pressure hPa : 490
rack travel mm : 13.45
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.94
Test oil : ISO 4113
Combination No. : 0402036757
Injection pump
Pump designation : PES6P120A720/3LS3255
: -3
EP type number : 0412026774
Governor
Governor design. : RQV300...1000PA876
: -12
Governor no. : 0421813897
Cust. part No. : 51.11103-7351

Customer spec. information
Customer : MAN
Motor : D2866LF05
Power KW : 272.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Lube oil : 1409918004
Test Lines : 1680750075

D21

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 3.75
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 15.00
Tolerance mm : + 0.50
Firing order : 6- 2- 4- 1- 5-
: 3
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 6.10
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 245.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : ± 0.25

Rated speed rpm : 1059
guide sleeve
travel mm : 10.13
Tolerance mm : ± 0.25

Rated speed rpm : 793
guide sleeve
travel mm : 6.88
Tolerance mm : ± 0.25

Rated speed rpm : 318
guide sleeve
travel mm : 1.89
Tolerance mm : ± 0.25

Rated speed rpm : 368
guide sleeve
travel mm : 2.47
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.63
Tolerance mm : ± 0.25

Rated speed rpm : 1270
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1100

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 302.0
tolerance degree : + 4.0

rack travel mm : 14.10
Rated speed rpm : 1045
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1165
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 258.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 15.15

Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 8.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 470
rack travel mm : 14.20
Tolerance mm : + 0.20

Pressure hPa : 110
rack travel mm : 12.35
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1045
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

D24

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.11.94
Test oil : ISO 4113

Combination No. : 0402046824

Injection pump
Pump designation : PES6P120A320RS3279
: -1
EP type number : 0412026758

Governor
Governor design. : RQ275/1050PA999-5
Governor no. : 0421801663

Cust. part No. : CCEP-5112B 66-175

Customer spec. information

Customer : RVI
Motor : MIHR 062045 A/3
Power kW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1680750089

Outside diameter : 8.0

D25

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.
mm : 10.50
Tolerance mm : ± 0.50

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 158.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : -5.00
Tolerance mm : \pm 0.20

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1126
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 582
guide sleeve
travel mm : 5.14
Tolerance mm : \pm 0.10

Rated speed rpm : 710
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1380
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 750

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 158.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 274.0
tolerance degree : \pm 4.0

rack travel mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : \pm 8

rack travel mm : -7.10
Rated speed rpm : 1245
Tolerance 1/min : \pm 15

rack travel mm : -10.65
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 253.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -5.00
Tolerance mm : \pm 0.10

rack travel mm : -9.00
Rated speed rpm : 520
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm max. : < -3.50

TORQUE CONTROL

Rated speed rpm : 700

Rated speed rpm : 1050
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.10
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : -0.35
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : -0.75
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050

Del. quantity
cm3/1000 strokes : 154.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 114.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1138
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -5.00
Tolerance mm : + 0.20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.11.94
Test oil : ISO 4113
Combination No. : 0402046828
Injection pump
Pump designation : PES6P120A320RS3288
EP type number : 0412026750
Governor
Governor design. : RQV275...1000PA995
 : -2
Governor no. : 0421813940
Cust. part No. : CCEP5118A 66-183

Customer-spec. information

Customer : RVI
Motor : MIDR 063540 M/3
Power KW : 236.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413071
Inlet press. bar : 2.5
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Lube oil : 1409918004
Test lines : 1680750089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.55

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 243.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : -7.40
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 10.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 306.0
tolerance degree : \pm 4.0

rack travel mm : -1.00
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

rack travel mm : -8.40
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : -11.95
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 248.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm max. : $<$ -5.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 1000
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : -4.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.25
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : -1.70
Tolerance mm : + 0.10

Pressure hPa : 280
rack travel mm : -0.75
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 195
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 231.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 114.0
Tolerance
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000S. : + 8.0

EO2

Speed

Tolerance
cm3/1000 strokes : 10.0
Check tolerance
cm3/1000S. : 14.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 157.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1075
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Del. quantity
cm3/1000 strokes : 160.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -7.40
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 25.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 5.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113
Combination No. : 0402046865A
Injection pump
Pump designation : PES6P120A320LS3321
: -1
EP type number : 0412026766
Governor
Governor design. : RQ275...950PA1085-1
Governor no. : 0421801691

Cust. part No. : 645 673

Customer spec. information
Customer : RABA
Motor : SIEHE BEMERKUNG

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0
x inside diameter : 3.0

EC3

x length mm : 600

REMARKS

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 197.0

| | |
|-------------------|----------|
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 4.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 5.0 |
| Check tolerance | |
| cm3/1000S. | : 9.0 |
| 2nd speed rpm | : 275 |
| Rack travel in mm | : 9.10 |
| Tolerance mm | : + 0.30 |
| Del. quantity | |
| cm3/1000 strokes | : 22.0 |
| Tolerance | |
| cm3/1000 strokes | : + 3.0 |
| Check tolerance | |
| cm3/1000S. | : + 6.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-----------------|----------|
| Rated speed rpm | : 275 |
| guide sleeve | |
| travel mm | : 2.26 |
| Tolerance mm | : + 0.10 |
| Rated speed rpm | : 1020 |
| guide sleeve | |
| travel mm | : 6.35 |
| Tolerance mm | : + 0.10 |
| Rated speed rpm | : 950 |
| guide sleeve | |
| travel mm | : 6.00 |
| Tolerance mm | : + 0.10 |
| Rated speed rpm | : 369 |
| guide sleeve | |
| travel mm | : 4.64 |
| Tolerance mm | : + 0.10 |
| Rated speed rpm | : 460 |
| guide sleeve | |
| travel mm | : 6.00 |

| | |
|-----------------|----------|
| Tolerance mm | : + 0.10 |
| Rated speed rpm | : 1190 |
| guide sleeve | |
| travel mm | : 11.50 |
| Tolerance mm | : + 0.50 |

GUIDE SLEEVE POSITION

| | |
|-------------------|----------|
| Rated speed rpm | : 500 |
| Rack travel in mm | : 20.00 |
| Tolerance mm | : + 0.80 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|---------|
| Rated speed rpm | : 600 |
| Aneroid pressure | |
| hPa | : - |
| Del. quantity | |
| cm3/1000 strokes | : 197.0 |
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 4.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 5.0 |
| Check tolerance | |
| cm3/1000S. | : 9.0 |

RATED SPEED

| | |
|------------------|----------|
| control lever | |
| position degree | : 36.0 |
| tolerance degree | : + 4.0 |
| control lever | |
| position degree | : 98.0 |
| tolerance degree | : + 4.0 |
| rack travel mm | : 13.05 |
| Rated speed rpm | : 1012 |
| Tolerance 1/min | : + 5 |
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1100 |
| Tolerance 1/min | : + 15 |
| rack travel mm | : 0.50 |
| Tolerance mm | : + 0.50 |
| Rated speed rpm | : 1200 |

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.80
Tolerance mm : \pm 0.10

Rated speed rpm : 355
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 14.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 380
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 590
rack travel mm : 13.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.05
Rated speed rpm : 1012
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 9.10
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.94
Test oil : ISO 4113
Combination No. : 0402616802
Injection pump
Pump designation : PE6P130A700RS7272
EP type number : 0412636822
Governor
Governor design. :
Governor no. :
Cust. part No. : 866008
: -P06 21.11.94

Customer-spec. information
Customer : PENTA
Motor : TAD 1630 G

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1457413010
Inlet press. bar : 1.5
Tolerance bar : + 0.1
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

E07

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.55
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 14.20
Tolerance mm : + 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 14.85
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 503.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 5.0
Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

2nd speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 503.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

rack travel mm : 4.00

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

LOW IDLE

Rated speed rpm : 300

E08

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.11.94
Test oil : ISO 4113
Combination No. : 0402646610
Injection pump
Pump designation : PE6P130A720RS7273
EP type number : 0412636823
Governor
Governor design. : RQV250...900PA881-2
Governor no. : 0421814035
Cust. part No. : 865567
: -P04 21.11.94

Customer-spec. information
Customer : PENTA
Motor : TAD 1630 P

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1457413010
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 9.30
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 13.00
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 415.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.12
Tolerance mm : + 0.25

Rated speed rpm : 979
guide sleeve
travel mm : 8.54
Tolerance mm : + 0.25

Rated speed rpm : 315
guide sleeve
travel mm : 1.98
Tolerance mm : + 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.47
Tolerance mm : + 0.25

Rated speed rpm : 660
guide sleeve
travel mm : 4.49
Tolerance mm : + 0.25

Rated speed rpm : 1160
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1030

Rack travel in mm : 11.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 415.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 5.0
Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

RATED SPEED

control lever
position degree : 66.0
tolerance degree : + 4.0

control lever
position degree : 122.0
tolerance degree : + 4.0

rack travel mm : 12.00
Rated speed rpm : 965
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1040
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1180

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.50
Tolerance mm : + 0.20

Rated speed rpm : 150
CRT mm min. : > 6.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 335

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1600
rack travel mm : 13.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 1100
rack travel mm : 3.35
Tolerance mm : \pm 0.15

Pressure hPa : 550
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 257.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 965

Tolerance 1/min : \pm 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113
Combination No. : 0402646616
Injection pump
Pump designation : PE6P120A320LS7278
EP type number : 0412626880
Governor
Governor design. : RQV325...1000PA1058
Governor no. : 0421814047

Cust. part No. :

Customer-spec. information
Customer : LIAZ
Motor : M640S
Power KW : 242.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 233.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.55
Tolerance mm : ± 0.25

Rated speed rpm : 1056
guide sleeve
travel mm : 8.66
Tolerance mm : ± 0.25

Rated speed rpm : 764
guide sleeve
travel mm : 5.77
Tolerance mm : ± 0.25

Rated speed rpm : 404
guide sleeve
travel mm : 2.41
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.35
Tolerance mm : ± 0.25

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1100

Rack travel in mm : 12.30
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 233.0
Tolerance

cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 63.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

rack travel mm : 12.45
Rated speed rpm : 1045
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 9.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.10
Tolerance mm : + 0.30

rack travel mm : 2.00
Rated speed rpm : 485
Tolerance 1/min : + 30

Rated speed rpm : 225
CRT mm min. : > 6.70

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.50
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 520
rack travel mm : 10.60
Tolerance mm : + 0.25

Pressure hPa : 1000
rack travel mm : 13.00
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 12.45
Rated speed rpm : 1045
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 310.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113
Combination No. : 0402646836
Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0412626926
Governor
Governor design. : RQV200...1000PA725
: -1
Governor no. : 0421813552
Cust. part No. : 1107958

Customer spec. information
Customer : SCANIA
Motor : DSC11 18

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1688901019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750015
Outside diameter : 6.0

E15

x inside diameter : 3.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °MM : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1040

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : ± 4.0

control lever
position degree : 63.0
tolerance degree : ± 4.0

rack travel mm : 13.10
Rated speed rpm : 1045
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

control lever
position degree : 65.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 225
rack travel mm : 4.60
Tolerance mm : ± 0.30

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 6.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 14.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 510
rack travel mm : 13.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.10
Rated speed rpm : 1045

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

Note remarks

| | | |
|------------------|---|---------------------|
| Edition | : | 17.11.94 |
| Test oil | : | ISO 4113 |
| Combination No. | : | 0402648868 |
| Injection pump | | |
| Pump designation | : | PE8P120A920/4LS7180 |
| | : | -10 |
| EP type number | : | 0412628892 |
| Governor | | |
| Governer design. | : | RQV350...1050PA795 |
| | : | -8 |
| Governer no. | : | 0421813770 |
| Cust. part No. | : | 1305130 |

Customer : SCANIA
Motor : DSI 14

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5
Tolerance bar : \pm 0.1

Opening pressure : 208.5 bar
Tolerance bar : ± 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 31.0
Tolerance bar : \pm 1.0

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Time to cyl. no. : 1

Rated speed rpm : 700

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1325

Rack travel in mm : 8.50
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 47.0
tolerance degree : ± 4.0

control lever
position degree : 102.0
tolerance degree : ± 4.0

rack travel mm : 12.20
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

control lever
position degree : 16.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.30

Rated speed rpm : 250

CRT mm min. : > 6.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.25
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 215
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 1095

E20

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113
Combination No. : 0402648873
Injection pump
Pump designation : PE8P120A920/4LS7166
: -1
EP type number : 0412628897
Governor
Governor design. : RG900PA758-13
Governor no. : 0421801501

Cust. part No. : 1305126

Customer spec. information
Customer : SCANIA
Motor : DS 14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 909
guide sleeve
travel mm : 4.74
Tolerance mm : ± 0.25

Rated speed rpm : 630
guide sleeve
travel mm : -6.36
Tolerance mm : ± 0.25

Rated speed rpm : 1040
guide sleeve
travel mm : 16.81
Tolerance mm : ± 0.25

Rated speed rpm : 977
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1040
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 247.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 24.0
tolerance degree : ± 4.0

control lever
position degree : 86.0
tolerance degree : ± 4.0

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.55
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.20
Tolerance mm : ± 0.20

Rated speed rpm : 500
Pressure hPa : 215
rack travel mm : 10.90
Tolerance mm : ± 0.10

Pressure hPa : 365
rack travel mm : 11.85
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa :

-

Tolerance
cm³/1000 strokes : + 4.0

Check tolerance
cm³/1000S. : + 6.0

Tolerance
cm³/1000 strokes :

4.0

Check tolerance
cm³/1000S. :

7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.94
Test oil : ISO 4113

Combination No. : 0402648942

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0412628886

Governor
Governor design. : RQ300/950PA1031-16
Governor no. : 0421801722

Cust. part No. : 0240742302

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1638901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

E24

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.63
Tolerance mm : \pm 0.10

Rated speed rpm : 1005
guide sleeve
travel mm : 6.69
Tolerance mm : \pm 0.10

Rated speed rpm : 950
guide sleeve
travel mm : 6.35
Tolerance mm : \pm 0.10

Rated speed rpm : 800

guide sleeve
travel mm : 6.09
Tolerance mm : \pm 0.10

Rated speed rpm : 428
guide sleeve
travel mm : 4.02
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1160
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 864
guide sleeve
travel mm : 6.26
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 998

Tolerance 1/min : + 8
 rack travel mm : 4.00
 Rated speed rpm : 1080
 Tolerance 1/min : + 15

 rack travel mm : 0.75
 Tolerance mm : + 0.75
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 69.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.50
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 405
 Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.00

TORQUE CONTROL

Rated speed rpm : 550
 rack travel mm : 14.40
 Tolerance mm : + 0.05

Rated speed rpm : 950
 rack travel mm : 14.00
 Tolerance mm : + 0.10

Rated speed rpm : 825
 rack travel mm : 14.40
 Tolerance mm : + 0.05

Rated speed rpm : 400
 rack travel mm : 12.90
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
 Pressure hPa : 1200

rack travel mm : 14.40
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 400
 rack travel mm : 10.60
 Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 450
 rack travel mm : 12.90
 Tolerance mm : + 0.10

Pressure hPa : 300
 rack travel mm : 11.90
 Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100

Check
 speed 1/min : > 80

Rated speed rpm : > 220

Check
 speed 1/min : > 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 950
 Del. quantity
 cm³/1000 strokes : 214.0

Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 5.0

Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : 450
 Rated speed rpm : 400

Del. quantity
 cm³/1000 strokes : 166.0
 Tolerance
 cm³/1000 strokes : + 1.5
 Check tolerance
 cm³/1000S. : + 4.5

Aneroid pressure
 hPa : -

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.11.94
Test oil : ISO 4113

Combination No. : 0402648946

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0412628886

Governor
Governor design. : RQ300/1050PA1031-15
Governor no. : 0421801721

Cust. part No. : 0230747902

Customer spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.75
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.64
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.30
Tolerance mm : \pm 0.10

Rated speed rpm : 790

guide sleeve
travel mm : 6.08
Tolerance mm : \pm 0.10

Rated speed rpm : 407
guide sleeve
travel mm : 4.27
Tolerance mm : \pm 0.10

Rated speed rpm : 510
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 844
guide sleeve
travel mm : 6.23
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 226.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 1098

Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1190

Tolerance 1/min : + 15

rack travel mm : 0.70

Tolerance mm : + 0.70

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 70.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 3.50

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 405

Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.10

TORQUE CONTROL

Rated speed rpm : 550

rack travel mm : 14.40

Tolerance mm : + 0.05

Rated speed rpm : 1050

rack travel mm : 14.05

Tolerance mm : + 0.10

Rated speed rpm : 950

rack travel mm : 14.20

Tolerance mm : + 0.10

Rated speed rpm : 800

rack travel mm : 14.40

Tolerance mm : + 0.10

Rated speed rpm : 400

rack travel mm : 12.90

Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400

Pressure hPa : 1200

rack travel mm : 14.40

Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 400

rack travel mm : 10.60

Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 450

rack travel mm : 12.90

Tolerance mm : + 0.10

Pressure hPa : 300

rack travel mm : 11.90

Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100

Check

speed 1/min : > 80

Rated speed rpm : < 220

Check

speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200

Rated speed rpm : 1050

Del. quantity

cm³/1000 strokes : 212.0

Tolerance

cm³/1000 strokes : + 2.0

Check tolerance

cm³/1000S. : + 5.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

Aneroid pressure

hPa : 450

Rated speed rpm : 400

Del. quantity

cm³/1000 strokes : 166.0

Tolerance

cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 4.5

Aneroid pressure
hPa :

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 107.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00

Rated speed rpm : 1098

Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : + 10.0

Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300

rack travel mm : 5.70

Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113
Combination No. : 0402648972
Injection pump
Pump designation : PE8P120A920/4LS7189
: -10
EP type number : 0412628893
Governor
Governor design. : RQV350...1100PA795
: -21
Governor no. : 0421814079
Cust. part No. : 1351804

Customer spec. information
Customer : SCANIA
Motor : DSI14

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1417413025
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 20.0
Test nozzle holde
assembly : 1688901104
Opening pressure
bar : 251.5
Tolerance bar : ± 1.5
Lube oil : 1409918004

FD4

Test lines : 1680750008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Check and set without ROBO diaphragm

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.95
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 283.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.44
Tolerance mm : \pm 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 8.46
Tolerance mm : \pm 0.15

Rated speed rpm : 796
guide sleeve
travel mm : 5.34
Tolerance mm : \pm 0.25

Rated speed rpm : 411
guide sleeve
travel mm : 2.06
Tolerance mm : \pm 0.25

Rated speed rpm : 461

guide sleeve
travel mm : 2.64
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.19
Tolerance mm : \pm 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1200

Rack travel in mm : 14.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 48.0
tolerance degree : \pm 4.0

control lever
position degree : 111.0
tolerance degree : \pm 4.0

rack travel mm : 13.95
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1290
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

control lever
position degree : 15.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : + 0.30

Rated speed rpm : 250

CRT mm min. : > 7.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.95
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.95
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 11.40
Tolerance mm : + 0.25

FD6

Pressure hPa : 860
rack travel mm : 13.65
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 13.95
Rated speed rpm : 1145
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : ← 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.10.94
Test oil : ISO 4113

Combination No. : 0402648980

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0412628855

Governor
Governor design. : RQV300...950PA797
: -39
Governor no. : 0421814115

Cust. part No. : 0250749102

Customer spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

F08

Test lines : 1680750075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : \pm 0.20

Rated speed rpm : 1010
guide sleeve
travel mm : 8.56
Tolerance mm : \pm 0.15

Rated speed rpm : 567
guide sleeve
travel mm : 4.66
Tolerance mm : \pm 0.25

Rated speed rpm : 617

guide sleeve
travel mm : 5.23
Tolerance mm : \pm 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 6.31
Tolerance mm : \pm 0.25

Rated speed rpm : 1092
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1190
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1030

Rack travel in mm : 14.20
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : \pm 4.0

rack travel mm : 14.20
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1095
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 200
CRT mm min. : > 8.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 15.20
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.15
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 10.00
Tolerance mm : + 0.20

Pressure hPa : 500
rack travel mm : 11.75
Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 274.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 271.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 14.20
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 255.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

Note remarks

Edition : 22.11.94
Test oil : ISO 4113

Combination No. : 0402648984

Injection pump
Pump designation : PE8P120A320LS7839
: -10
EP type number : 0412628855

Governor
Governor design. : RQ300/1050PA972-12
Governor no. : 0421801759

Cust. part No. : 0250749302

Customer : MB-NFZ
Motor : OM442 LA
Power Kw : 370.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : \pm 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure : 208.5
Tolerance bar : \pm 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

```
Prestroke mm      :      5.05
Tolerance mm      : + 0.05
```

test only : + 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3
: - 5-4-1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.20

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 289.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.94
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.34
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 414
guide sleeve
travel mm : 4.51
Tolerance mm : \pm 0.10

Rated speed rpm : 570
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600
Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : \pm 4.0

rack travel mm : 14.20
Rated speed rpm : 1098
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ 8.20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.20
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 15.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 15.20
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.15
Tolerance mm : \pm 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 10.00
Tolerance mm : \pm 0.20

Pressure hPa : 500

rack travel mm : 11.75
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

Rated speed rpm : $<$ 220

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 274.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : 1200

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 14.20

Rated speed rpm : 1098

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.94
Test oil : ISO 4113

Combination No. : 0402678823

Injection pump
Pump designation : PE8P120A320LS7801-2
EP type number : 0412628825

Governor
Governor design. : RSV550...850POA574
Governor no. : 0421833430

Cust. part No. : 0250742102

Customer spec. information
Customer : MB-NFZ
Motor : OM442LA
Power KW : 302.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.60

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3
: -5-4-1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 830

Rack travel in mm : 15.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 550

Rack travel in mm : 4.60
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 830
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 86.0
tolerance degree : + 4.0

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 550
rack travel mm : 4.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 830
rack travel mm : 15.35
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 15.35
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 15.35

Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 13.50
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 14.90
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 14.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 550
rack travel mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.11.94
Test oil : ISO 4113
Combination No. : 0403446316
Injection pump
Pump designation : PES6MW100/320RS1216
: -1
EP type number : 0413406223
Governor
Governor design. : RQV350...1175MW113
: -2
Governor no. : 0420083248
Cust. part No. :

Customer-spec. information
Customer : RVI
Motor : MIDR 060226 X
Power KW : 166.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413033
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1680750008
Outside diameter : 6.0

F19

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.25
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 13.00
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1175
Rack travel in mm : 13.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : ± 1.0

| | |
|--|---------|
| Check tolerance cm ³ /1000S. | : + 3.0 |
|--|---------|

| | |
|--|-------|
| Spreed Tolerance cm ³ /1000 strokes | : 3.5 |
|--|-------|

| | |
|--|-------|
| Check tolerance cm ³ /1000S. | : 6.0 |
|--|-------|

| | |
|--|--------|
| Del. quantity cm ³ /1000 strokes | : 29.0 |
|--|--------|

| | |
|--|---------|
| Tolerance cm ³ /1000 strokes | : + 2.0 |
|--|---------|

| | |
|--|---------|
| Check tolerance cm ³ /1000S. | : + 4.5 |
|--|---------|

| | |
|--|-------|
| Spreed Tolerance cm ³ /1000 strokes | : 3.5 |
|--|-------|

| | |
|--|-------|
| Check tolerance cm ³ /1000S. | : 5.0 |
|--|-------|

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|---------------------------|----------|
| Rated speed rpm | : 350 |
| guide sleeve travel mm | : 0.86 |
| Tolerance mm | : + 0.25 |

| | |
|---------------------------|----------|
| Rated speed rpm | : 1266 |
| guide sleeve travel mm | : 7.11 |
| Tolerance mm | : + 0.25 |

| | |
|---------------------------|----------|
| Rated speed rpm | : 929 |
| guide sleeve travel mm | : 5.38 |
| Tolerance mm | : + 0.25 |

| | |
|---------------------------|----------|
| Rated speed rpm | : 468 |
| guide sleeve travel mm | : 2.46 |
| Tolerance mm | : + 0.25 |

| | |
|---------------------------|----------|
| Rated speed rpm | : 518 |
| guide sleeve travel mm | : 3.03 |
| Tolerance mm | : + 0.25 |

| | |
|---------------------------|----------|
| Rated speed rpm | : 620 |
| guide sleeve travel mm | : 3.63 |
| Tolerance mm | : + 0.25 |

| | |
|---------------------------|----------|
| Rated speed rpm | : 1800 |
| guide sleeve travel mm | : 11.50 |
| Tolerance mm | : + 0.50 |

GUIDE SLEEVE POSITION

| | |
|----------------------------------|--------|
| control lever position degree | : - 1 |
| Rated speed rpm | : 1460 |

| | |
|-------------------|----------|
| Rack travel in mm | : 16.50 |
| Tolerance mm | : + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--|---------|
| Rated speed rpm | : 1175 |
| Aneroid pressure hPa | : 1000 |
| Del. quantity cm ³ /1000 strokes | : 123.0 |
| Tolerance cm ³ /1000 strokes | : + 1.0 |
| Check tolerance cm ³ /1000S. | : + 3.0 |
| Spreed Tolerance cm ³ /1000 strokes | : 3.5 |
| Check tolerance cm ³ /1000S. | : 6.0 |

RATED SPEED

| | |
|----------------------------------|---------|
| control lever position degree | : 305.0 |
| tolerance degree | : + 4.0 |

| | |
|-----------------|---------|
| rack travel mm | : -1.00 |
| Rated speed rpm | : 1225 |
| Tolerance 1/min | : + 5 |

| | |
|-----------------|---------|
| rack travel mm | : -9.90 |
| Rated speed rpm | : 1455 |
| Tolerance 1/min | : + 15 |

| | |
|-----------------|----------|
| rack travel mm | : -13.50 |
| Tolerance mm | : + 0.50 |
| Rated speed rpm | : 1600 |

LOW IDLE

| | |
|----------------------------------|---------|
| control lever position degree | : 248.0 |
|----------------------------------|---------|

tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.80
Tolerance mm : + 0.20

Rated speed rpm : 200
CRT mm min. : > -7.00

TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 700

Rated speed rpm : 700
rack travel mm : -5.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -3.60
Tolerance mm : + 0.30

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : -2.85
Tolerance mm : + 0.15

Pressure hPa : 520
rack travel mm : -0.75
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 260
Check
speed 1/min : < 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 7.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1225
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113
Combination No. : 0400462047
Injection pump
Pump designation : PES2A80D320/3RS1298
EP type number : 0410482015
Governor
Governor design. : RSV325...1500A2C505R
Governor no. : 0420233187

Cust. part No. :

Customer-spec. information
Customer : MWM

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.25
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1-2
Phasing : 0-90
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1480
Rack travel in mm : 9.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 48.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
2nd speed rpm : 325
Rack travel in mm : 7.50

Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 12.5
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 3.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20

governor spring
 pre-tension
 click setting x : 3.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 48.5
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

RATED SPEED

control lever
 position degree : 105.0
 tolerance degree : \pm 4.0
 rack travel mm : 8.00

Rated speed rpm : 1525
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1560
 Tolerance 1/min : \pm 15
 rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1725
 rack travel mm : 4.00
 Rated speed rpm : 1575

LOW IDLE

control lever
 position degree : 67.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 7.00

Testing:

Rated speed rpm : 325
 rack travel mm : 7.50
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 465
 Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1480
 rack travel mm : 9.05
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 rack travel mm : 9.10
 Tolerance mm : \pm 0.10

BREAKAWAY

Rack travel in mm : 8.00
 Rated speed rpm : 1525
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75

LOW IDLE

Rated speed rpm : 325
rack travel mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113

Combination No. : 0400462050

Injection pump
Pump designation : PES2A80D310/3RS1322
EP type number : 0410482016

Governor
Governor design. : RSV325...1400A8C2011
: DL
Governor no. : 0420232330

Cust. part No. :

Customer-spec. information
Customer : MWM

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-2

Phasing : 0-90
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 60.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

2nd speed rpm : 325

Rack travel in mm : 5.60
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 12.5
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 3.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20

 governor spring
 pre-tension
 click setting x : 3.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 60.5
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

RATED SPEED

control lever
 position degree : 114.0
 tolerance degree : \pm 4.0

rack travel mm : 9.80
 Rated speed rpm : 1445
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1490
 Tolerance 1/min : \pm 15

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1550

rack travel mm : 4.00
 Rated speed rpm : 1515

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 5.00

Testing:

Rated speed rpm : 325
 rack travel mm : 5.60
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 530
 Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 10.80
 Tolerance mm : \pm 0.05

Rated speed rpm : 750
 rack travel mm : 11.80
 Tolerance mm : \pm 0.10

Rated speed rpm : 500
 rack travel mm : 11.85
 Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

| | |
|-------------------------------|---|
| Aneroid pressure | |
| hPa | : |
| Rated speed rpm | : |
| Del. quantity | : |
| cm ³ /1000 strokes | : |
| Tolerance | |
| cm ³ /1000 strokes | : |
| Check tolerance | |
| cm ³ /1000S. | : |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : |
| Check tolerance | |
| cm ³ /1000S. | : |

BREAKAWAY

| | |
|-------------------|---|
| Rack travel in mm | : |
| Rated speed rpm | : |
| Tolerance 1/min | : |

STARTING FUEL DELIVERY

| | |
|-------------------------------|---|
| Rated speed rpm | : |
| rack travel mm | : |
| Tolerance mm | : |
| Del. quantity | : |
| cm ³ /1000 strokes | : |
| Tolerance | |
| cm ³ /1000 strokes | : |
| Check tolerance | |
| cm ³ /1000S. | : |

LOW IDLE

| | |
|-------------------------------|---|
| Rated speed rpm | : |
| rack travel mm | : |
| Tolerance mm | : |
| Del. quantity | : |
| cm ³ /1000 strokes | : |
| Tolerance | |
| cm ³ /1000 strokes | : |
| Check tolerance | |
| cm ³ /1000S. | : |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : |
| Check tolerance | |
| cm ³ /1000S. | : |

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113

Combination No. : 0400463125

Injection pump
Pump designation : PES3A80D410/3RS1324
EP type number : 0410483017

Governor
Governor design. : RSV325...1400A8C495L
Governor no. : 0420232302

Cust. part No. :

Customer spec. information

Customer : KHD
Motor : F3L912

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

G01

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 50.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

2nd speed rpm : 325

Rack travel in mm : 9.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 3.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 50.5
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

RATED SPEED

control lever
 position degree : 119.0
 tolerance degree : \pm 4.0
 rack travel mm : 9.20
 Rated speed rpm : 1445
 Tolerance 1/min : \pm 5

G02

rack travel mm : 4.00
 Rated speed rpm : 1485
 Tolerance 1/min : \pm 15

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1700

rack travel mm : 4.00
 Rated speed rpm : 1535

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 8.50

Testing:

Rated speed rpm : 325
 rack travel mm : 9.00
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 700
 Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 10.20
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 rack travel mm : 11.55
 Tolerance mm : \pm 0.05

Rated speed rpm : 955
 rack travel mm : 10.90
 Tolerance mm : \pm 0.10

BREAKAWAY

Rack travel in mm : 9.20
 Rated speed rpm : 1445
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

| | | |
|-------------------------------|---|--------|
| Rated speed rpm | : | 100 |
| rack travel mm | : | 20.25 |
| Tolerance mm | : | ± 0.75 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 120.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | ± 7.5 |
| Check tolerance | | |
| cm ³ /1000S. | : | ± 10.0 |

LOW IDLE

| | | |
|-------------------------------|---|--------|
| Rated speed rpm | : | 325 |
| rack travel mm | : | 9.00 |
| Tolerance mm | : | ± 0.10 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 13.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | ± 1.5 |
| Check tolerance | | |
| cm ³ /1000S. | : | ± 3.5 |
| Speed | | |
| Tolerance | | |
| cm ³ /1000 strokes | : | 4.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | 6.0 |

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113

Combination No. : 0400463130

Injection pump
Pump designation : PES3A80D410/3RS1324
EP type number : 0410483017

Governor
Governor design. : RSV325...1075A8C657L
Governor no. : 0420232325

Cust. part No. :

Customer-spec. information

Customer : KHD
Motor : F3L912

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

G04

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 2

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °Nw : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 11.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 50.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

2nd speed rpm : 325

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.5

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 3.5

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 50.5

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.0

Spread
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

RATED SPEED

control lever
position degree : 52.0
tolerance degree : \pm 4.0

rack travel mm : 10.00
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 21.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.00

Testing:

Rated speed rpm : 325
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1075
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.55
Tolerance mm : \pm 0.15

Rated speed rpm : 500
rack travel mm : 12.05
Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113
Combination No. : 0400464125
Injection pump
Pump designation : PES4A80D410/3RS1300
EP type number : 0410484015

Governor
Governor design. : RSV325...1150A8C494
 : -4L
Governor no. : 0420232572

Cust. part No. :

Customer spec. information
Customer : KHD
Motor : F4L912
Power kW : 51.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419922198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : -1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 50.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

| | |
|---------------------------------|-------|
| <hr/> | |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes : | 2.5 |
| <hr/> | |
| Check tolerance | |
| cm ³ /1000S. : | 4.0 |
| <hr/> | |
| Del. quantity | |
| cm ³ /1000 strokes : | 11.0 |
| Tolerance | |
| cm ³ /1000 strokes : | + 1.5 |
| Check tolerance | |
| cm ³ /1000S. : | + 3.5 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes : | 4.0 |
| Check tolerance | |
| cm ³ /1000S. : | 6.0 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|---------------------|--------|
| control lever | |
| position degree : | - 3 |
| Rated speed rpm : | 800 |
| <hr/> | |
| Rack travel in mm : | 0.50 |
| Tolerance mm : | + 0.20 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|---------------------------------|-------|
| Rated speed rpm : | 1150 |
| Aneroid pressure | |
| hPa : | - |
| Del. quantity | |
| cm ³ /1000 strokes : | 50.5 |
| Tolerance | |
| cm ³ /1000 strokes : | + 0.5 |
| Check tolerance | |
| cm ³ /1000S. : | + 2.0 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes : | 2.5 |
| Check tolerance | |
| cm ³ /1000S. : | 4.0 |

RATED SPEED

| | |
|-------------------|-------|
| control lever | |
| position degree : | 107.0 |

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| | |
|--------------------|--------|
| tolerance degree : | + 4.0 |
| rack travel mm : | 9.50 |
| Rated speed rpm : | 1195 |
| Tolerance 1/min : | + 5 |
| <hr/> | |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 1245 |
| Tolerance 1/min : | + 15 |
| <hr/> | |
| rack travel mm : | 0.85 |
| Tolerance mm : | + 0.55 |
| Rated speed rpm : | 1400 |

LOW IDLE

| | |
|--------------------|-------|
| control lever | |
| position degree : | 74.0 |
| tolerance degree : | + 4.0 |

Setting point w/out bumper spring

| | |
|-------------------|------|
| Rated speed rpm : | 325 |
| rack travel mm : | 8.00 |

Testing:

| | |
|-------------------|--------|
| Rated speed rpm : | 325 |
| rack travel mm : | 8.50 |
| Tolerance mm : | + 0.10 |
| <hr/> | |
| rack travel mm : | 2.00 |
| Rated speed rpm : | 495 |
| Tolerance 1/min : | + 30 |

TORQUE CONTROL

| | |
|-------------------|--------|
| Rated speed rpm : | 1150 |
| rack travel mm : | 10.50 |
| Tolerance mm : | + 0.05 |
| <hr/> | |
| Rated speed rpm : | 915 |
| rack travel mm : | 11.00 |
| Tolerance mm : | + 0.10 |
| <hr/> | |
| Rated speed rpm : | 500 |
| rack travel mm : | 11.45 |
| Tolerance mm : | + 0.05 |

BREAKAWAY

| | |
|---------------------|------|
| Rack travel in mm : | 9.50 |
|---------------------|------|

Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113
Combination No. : 0400464132
Injection pump
Pump designation : PES4A80D410/3RS1349
EP type number : 0410484021

Governor
Governor design. : RSV325...1175A8C657
 : -3L
Governor no. : 0420232469

Cust. part No. :

Customer-spec. information

Customer : KHD
Motor : F4L912
Power kW : 51.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm : 10.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 58.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

2nd speed rpm : 325

Rack travel in mm : 7.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 3.5

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.0

Spread
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

RATED SPEED

control lever
position degree : 106.0
tolerance degree : + 4.0

rack travel mm : 9.10
Rated speed rpm : 1220
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1260
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1420

rack travel mm : 4.00
Rated speed rpm : 1280

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 6.60

Testing:

Rated speed rpm : 325
rack travel mm : 7.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 525
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1175
rack travel mm : 10.10
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.05
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 10.80

Tolerance mm : \pm 0.10
Rated speed rpm : 965
rack travel mm : 10.60
Tolerance mm : \pm 0.10

Check tolerance
cm³/1000S. : 6.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 55.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.10
Rated speed rpm : 1220
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 7.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113
Combination No. : 0400863013
Injection pump
Pump designation : PES3A90D410/3RS2740
EP type number : 0410893006
Governor
Governor design. : RSV325...1150AOC2219
: L
Governor no. : 0420232466
Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F3L913G
Power KW : 36.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test Lines : 1680750014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 2
Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 650
Rack travel in mm : 9.40
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 55.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

2nd speed rpm : 375

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 55.5
Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : \pm 4.0

rack travel mm : 8.10
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 4.90

Testing:

Rated speed rpm : 375
rack travel mm : 5.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

TORQUE CONTROL

Rated speed rpm : 350
rack travel mm : 9.55
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
rack travel mm : 9.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

BREAKAWAY

Rack travel in mm : 8.10
Rated speed rpm : 1095
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 5.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113
Combination No. : 0400863015
Injection pump
Pump designation : PES3A85D410/3RS2642
EP type number : 0410883989
Governor
Governor design. : RSV325...1200A2C2102
 : -3L
Governor no. : 0420232508
Cust. part No. :

Customer spec. information
Customer : KHD
Motor : F3L913
Power KW : 44.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 2

Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 10.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 69.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 7.0

2nd speed rpm : 325

Rack travel in mm : 7.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 69.0
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 98.0
tolerance degree : \pm 4.0

rack travel mm : 9.30
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1290
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1460

rack travel mm : 4.00
Rated speed rpm : 1310

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 7.40

Testing:

Rated speed rpm : 325
rack travel mm : 7.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 10.75

Tolerance mm : \pm 0.10
Rated speed rpm : 875
rack travel mm : 10.50
Tolerance mm : \pm 0.10

Check tolerance : 7.0
cm³/1000S.

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 9.30
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 7.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113
Combination No. : 0400864044
Injection pump
Pump designation : PES4A80D410/3RS2523
EP type number : 0410884043
Governor
Governor design. : RSV325...1400A8C540L
Governor no. : 0420232311

Cust. part No. :

Customer spec. information
Customer : KHD
Motor : F4L912

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380

Rack travel in mm : 10.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 57.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

2nd speed rpm : 325

Rack travel in mm : 8.10
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 3.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 57.5
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

RATED SPEED

control lever
 position degree : 117.0
 tolerance degree : \pm 4.0
 rack travel mm : 9.20
 Rated speed rpm : 1425
 Tolerance 1/min : \pm 5

G20

rack travel mm : 4.00
 Rated speed rpm : 1465
 Tolerance 1/min : \pm 15

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1600

rack travel mm : 4.00
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 69.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 7.60

Testing:

Rated speed rpm : 325
 rack travel mm : 8.10
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 640
 Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1380
 rack travel mm : 10.20
 Tolerance mm : \pm 0.05

Rated speed rpm : 900
 rack travel mm : 10.95
 Tolerance mm : \pm 0.15

Rated speed rpm : 500
 rack travel mm : 11.45
 Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 9.20
 Rated speed rpm : 1425
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 8.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.94
Test oil : ISO 4113
Combination No. : 0400864085
Injection pump
Pump designation : PES4A85D410/3RS2799
EP type number : 0410884944
Governor
Governor design. : RSV325...1150A8C2239
: -3L
Governor no. : 0420232553
Cust. part No. :

Customer spec. information
Customer : KHD
Motor : BF4L913
Power KW : 74.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1130
Rack travel in mm : 11.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 82.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

2nd speed rpm : 500

Rack travel in mm : 7.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 82.5
Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 106.0
tolerance degree : \pm 4.0

rack travel mm : 10.70
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1255

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 7.00

Testing:

Rated speed rpm : 500
rack travel mm : 7.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 620
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.05

Tolerance mm : \pm 0.10
Rated speed rpm : 830
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Check tolerance
cm³/1000S. : 7.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.70
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 500
rack travel mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113
Combination No. : 0400866092
Injection pump
Pump designation : PES6A80D410/3RS2527
EP type number : 0410886059
Governor
Governor design. : RSV325...140CA8C54OL
Governor no. : 0420232311

Cust. part No. :

Customer spec. information
Customer : KHD

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380
Rack travel in mm : 11.50
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
2nd speed rpm : 325

Rack travel in mm : 8.50
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 10.0
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 3.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring
 pre-tension
 click setting x : 4.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 65.5
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

RATED SPEED

control lever
 position degree : 117.0
 tolerance degree : \pm 4.0

rack travel mm : 10.50
 Rated speed rpm : 1425
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1460
 Tolerance 1/min : \pm 15

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1680

rack travel mm : 4.00
 Rated speed rpm : 1525

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 8.00

Testing:

Rated speed rpm : 325
 rack travel mm : 8.50
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 670
 Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1380
 rack travel mm : 11.50
 Tolerance mm : \pm 0.05

Rated speed rpm : 900
 rack travel mm : 12.25
 Tolerance mm : \pm 0.15

Rated speed rpm : 400
 rack travel mm : 12.75
 Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1425
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113
Combination No. : 0400866093
Injection pump
Pump designation : PES6A80D410/3RS2527
EP type number : 0410886059
Governor
Governor design. : RSV325...1150A8C604
 : -1L
Governor no. : 0420232573

Cust. part No. :

Customer spec. information
Customer : KHD
Motor : F6L912
Power KW : 78.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 12.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 65.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
 cm³/1000S. : 4.0
 2nd speed rpm : 325
 Rack travel in mm : 9.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 1.5
 Check tolerance
 cm³/1000S. : + 3.5
 Spreed
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 65.5
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

RATED SPEED

control lever
 position degree : 102.0

H01

tolerance degree : + 4.0
 rack travel mm : 11.60
 Rated speed rpm : 1175
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1230
 Tolerance 1/min : + 15
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1385
 rack travel mm : 4.00
 Rated speed rpm : 1255

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 8.50

Testing:

Rated speed rpm : 325
 rack travel mm : 9.00
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 490
 Tolerance 1/min : + 30

TORQUE CONTROL

Dimension a mm : 0.70

Rated speed rpm : 1130
 rack travel mm : 12.60
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 13.35
 Tolerance mm : + 0.05

Rated speed rpm : 850
 rack travel mm : 13.05
 Tolerance mm : + 0.15

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1175
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 9.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113
Combination No. : 0400873041
Injection pump
Pump designation : PES3A90D410RS2740-1
EP type number : 0410893008
Governor
Governor design. : RSV325...1150A0C2219
: L
Governor no. : 0420232466
Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F3L913G
Power kW : 36.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750014
Outside diameter : 6.0

H03

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 2
Phasing : 0-120-240
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Rated speed rpm : 650
Rack travel in mm : 9.40
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 55.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

2nd speed rpm : 375

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 55.5
Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : \pm 4.0

rack travel mm : 8.10
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 4.90

Testing:

Rated speed rpm : 375
rack travel mm : 5.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

TORQUE CONTROL

Rated speed rpm : 350
rack travel mm : 9.55
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
rack travel mm : 9.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 8.10
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 375
rack travel mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

H05

Speed

Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113
Combination No. : 0400876337
Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0410896082
Governor
Governor design. : RSV350...1400A0C1135
: -2L
Governor no. : 0420232473
Cust. part No. :

Customer spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 96.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

H06

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.30
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 10.85
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 113.0
tolerance degree : ± 4.0

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1630

rack travel mm : 4.00
Rated speed rpm : 1530

rack travel mm : 9.80
Rated speed rpm : 1445
Tolerance 1/min : ± 5

H07

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 9.10
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.85
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 12.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.90
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 11.55
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 51.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.10
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.94
Test oil : ISO 4113

Combination No. : 0402046850

Injection pump
Pump designation : PES6P120A320RS3320
EP type number : 0412026763

Governor
Governor design. : RQV275...1000PA995
: -2
Governor no. : 0421813940

Cust. part No. : CCEP-5134 66-211

Customer-spec. information
Customer : RVI
Motor : MIDR 063540 M/3
Power KW : 236.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

HD9

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.40
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.55
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 243.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : -7.40
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.66
Tolerance mm : \pm 0.10

Rated speed rpm : 1086
guide sleeve
travel mm : 8.46
Tolerance mm : \pm 0.10

Rated speed rpm : 773
guide sleeve
travel mm : 6.09
Tolerance mm : \pm 0.20

Rated speed rpm : 343

guide sleeve
travel mm : 2.33
Tolerance mm : \pm 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : \pm 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81
Tolerance mm : \pm 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 11.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 306.0
tolerance degree : \pm 4.0

rack travel mm : -1.00
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

rack travel mm : -8.40
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : -11.95
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 248.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $>$ -5.90

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : -4.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.25
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : -1.70
Tolerance mm : \pm 0.10

Pressure hPa : 280
rack travel mm : -0.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 195
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 231.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -7.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113

Combination No. : 0402646605A

Injection pump
Pump designation : PE6P130A720RS7197
EP type number :

Governor
Governor design. : RQV300...1000PA946
 : -2
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8210.22.800
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 191.0

| | |
|------------------|---------|
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 4.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 5.0 |
| Check tolerance | |
| cm3/1000S. | : 8.0 |
| Del. quantity | |
| cm3/1000 strokes | : 22.0 |
| Tolerance | |
| cm3/1000 strokes | : + 3.0 |
| Check tolerance | |
| cm3/1000S. | : + 7.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 8.0 |
| Check tolerance | |
| cm3/1000S. | : 12.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|-----------------|----------|
| Rated speed rpm | : 300 |
| guide sleeve | |
| travel mm | : 1.20 |
| Tolerance mm | : + 0.20 |
| Rated speed rpm | : 1045 |
| guide sleeve | |
| travel mm | : 8.40 |
| Tolerance mm | : + 0.15 |
| Rated speed rpm | : 700 |
| guide sleeve | |
| travel mm | : 5.20 |
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 400 |
| guide sleeve | |
| travel mm | : 2.60 |
| Tolerance mm | : + 0.25 |
| Rated speed rpm | : 1350 |
| guide sleeve | |
| travel mm | : 11.50 |
| Tolerance mm | : + 0.50 |

GUIDE SLEEVE POSITION

H14

| | |
|-------------------|----------|
| control lever | |
| position degree | : - 1 |
| Rated speed rpm | : 1130 |
| Rack travel in mm | : 10.90 |
| Tolerance mm | : + 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|------------------|---------|
| Rated speed rpm | : 1000 |
| Aneroid pressure | |
| hPa | : 900 |
| Del. quantity | |
| cm3/1000 strokes | : 191.0 |
| Tolerance | |
| cm3/1000 strokes | : + 1.0 |
| Check tolerance | |
| cm3/1000S. | : + 4.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes | : 5.0 |
| Check tolerance | |
| cm3/1000S. | : 8.0 |

RATED SPEED

| | |
|------------------|----------|
| control lever | |
| position degree | : 116.0 |
| tolerance degree | : + 4.0 |
| rack travel mm | : 10.90 |
| Rated speed rpm | : 1045 |
| Tolerance 1/min | : + 5 |
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1145 |
| Tolerance 1/min | : + 15 |
| rack travel mm | : 0.50 |
| Tolerance mm | : + 0.50 |
| Rated speed rpm | : 1350 |
| rack travel mm | : 4.00 |

LOW IDLE

| | |
|------------------|---------|
| control lever | |
| position degree | : 64.0 |
| tolerance degree | : + 4.0 |

Testing:

| | |
|-----------------|-------|
| Rated speed rpm | : 300 |
|-----------------|-------|

rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : \pm 20

Rated speed rpm : 100

CRT mm min. : $>$ 6.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 470

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.30
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 11.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.20
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : 10.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 7.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.94
Test oil : ISO 4113

Combination No. : 0402648988

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0412628886

Governor
Governor design. : RQV300...1050PA1033
: -16
Governor no. : 0421814122

Cust. part No. : 0230742802

Customer spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

H16

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.29
Tolerance mm : ± 0.20

Rated speed rpm : 1110
guide sleeve
travel mm : 8.58
Tolerance mm : ± 0.15

Rated speed rpm : 558
guide sleeve
travel mm : 4.53
Tolerance mm : ± 0.25

Rated speed rpm : 608
guide sleeve
travel mm : 5.03
Tolerance mm : ± 0.25

Rated speed rpm : 820

guide sleeve
travel mm : 6.13
Tolerance mm : ± 0.25

Rated speed rpm : 1183
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1145

Rack travel in mm : 13.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : ± 4.0

rack travel mm : 13.00
Rated speed rpm : 1098
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : ± 15

rack travel mm : 0.75

Tolerance mm : \pm 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 7.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.05
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 775
rack travel mm : 14.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.80
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -

H18

Rated speed rpm : 400
rack travel mm : 10.60
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 450
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 166.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1098
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113

Combination No. : 0402746640

Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 0412726925

Governor
Governor design. : RGV300...1050PA1191
Governor no. : 0421814114

Cust. part No. : CCEP 5147A 66-223

Customer-spec. information
Customer : RVI
Motor : MIDR 06.20.45 C4
Power KW : 188.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750008

H2O

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 197.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : -6.10
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 35.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.25

Rated speed rpm : 1140
guide sleeve
travel mm : 8.49
Tolerance mm : + 0.25

Rated speed rpm : 754
guide sleeve
travel mm : 6.10
Tolerance mm : + 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.40
Tolerance mm : + 0.25

Rated speed rpm : 415
guide sleeve
travel mm : 3.28
Tolerance mm : + 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.86
Tolerance mm : + 0.25

Rated speed rpm : 1460
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 11.70
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 300.0
tolerance degree : + 4.0

rack travel mm : -1.00
Rated speed rpm : 1125
Tolerance 1/min : + 5

rack travel mm : -8.70
Rated speed rpm : 1285
Tolerance 1/min : + 15

rack travel mm : -12.20
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 267.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 200
CRT mm max. : $<$ -3.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 700
Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.10
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : -0.75
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : -0.40
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1125
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : -6.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.94
Test oil : ISO 4113

Combination No. : 0402746950A

Injection pump
Pump designation : PES6P120A720RS7224
: -2
EP type number :

Governor
Governor design. : RQV275...1100PA975
: -4K
Governor no. :

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.320

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.65
Tolerance mm : + 0.05

| | |
|---|---------|
| Del. quantity cm ³ /1000 strokes | : 168.0 |
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance cm ³ /1000S. | : ± 4.0 |
| Speed Tolerance cm ³ /1000 strokes | : 5.0 |
| Check tolerance cm ³ /1000S. | : 9.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

| | |
|---------------------------|----------|
| Rated speed rpm | : 275 |
| guide sleeve travel mm | : 1.90 |
| Tolerance mm | : ± 0.20 |
| Rated speed rpm | : 1145 |
| guide sleeve travel mm | : 10.40 |
| Tolerance mm | : ± 0.15 |
| Rated speed rpm | : 750 |
| guide sleeve travel mm | : 6.10 |
| Tolerance mm | : ± 0.25 |
| Rated speed rpm | : 430 |
| guide sleeve travel mm | : 3.60 |
| Tolerance mm | : ± 0.25 |
| Rated speed rpm | : 1360 |
| guide sleeve travel mm | : 13.50 |
| Tolerance mm | : ± 0.50 |

GUIDE SLEEVE POSITION

| | |
|----------------------------------|----------|
| control lever position degree | : - 1 |
| Rated speed rpm | : 1235 |
| Rack travel in mm | : 10.30 |
| Tolerance mm | : ± 1.30 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|---|---------|
| Rated speed rpm | : 1100 |
| Aneroid pressure hPa | : 1200 |
| Del. quantity cm ³ /1000 strokes | : 168.0 |
| Tolerance cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance cm ³ /1000S. | : ± 4.0 |
| Speed Tolerance cm ³ /1000 strokes | : 5.0 |
| Check tolerance cm ³ /1000S. | : 9.0 |

RATED SPEED

| | |
|----------------------------------|----------|
| control lever position degree | : 120.0 |
| tolerance degree | : ± 4.0 |
| rack travel mm | : 10.30 |
| Rated speed rpm | : 1170 |
| Tolerance 1/min | : ± 5 |
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1235 |
| Tolerance 1/min | : ± 15 |
| rack travel mm | : 0.50 |
| Tolerance mm | : ± 0.50 |
| Rated speed rpm | : 1350 |

LOW IDLE

| | |
|----------------------------------|---------|
| control lever position degree | : 76.0 |
| tolerance degree | : ± 4.0 |

Testing:

| | |
|-----------------|----------|
| Rated speed rpm | : 275 |
| rack travel mm | : 5.30 |
| Tolerance mm | : ± 0.10 |
| Rated speed rpm | : 100 |
| CRT mm min. | : > 6.80 |

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 10.20
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 10.65
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 420
rack travel mm : 8.40
Tolerance mm : \pm 0.20

Pressure hPa : 600
rack travel mm : 10.05
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 170
Check
speed 1/min : $>$ 150
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 163.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.30
Rated speed rpm : 1170
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113

Combination No. : 0402840301

Injection pump
Pump designation : PE12P120A520LS8507
EP type number : 0412820201

Governor
Governor design. : RQV300...1150PA1039
 : -3K
Governor no. : 0421815980

Cust. part No. : 51.11103-7329

Customer-spec. information
Customer : MAN
Motor : D 2842 LE 406
Power kW : 882.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750089

H27

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 6.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8
 : - 3- 4- 11- 10
 : - 2- 6- 7

Phasing : 0-45-60-105-120
 : -165-180-225-240
 : -285-300-345
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 331.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : ± 0.20

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.68
Tolerance mm : ± 0.25

Rated speed rpm : 1206
guide sleeve
travel mm : 9.84
Tolerance mm : ± 0.25

Rated speed rpm : 797
guide sleeve
travel mm : 6.36
Tolerance mm : ± 0.25

Rated speed rpm : 332
guide sleeve
travel mm : 2.25
Tolerance mm : ± 0.25

Rated speed rpm : 382
guide sleeve
travel mm : 3.03
Tolerance mm : ± 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.78
Tolerance mm : ± 0.25

Rated speed rpm : 1500

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1330

Rack travel in mm : 11.80
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 331.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 118.0
tolerance degree : ± 4.0

rack travel mm : 12.50
Rated speed rpm : 1195
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 7.40

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 11.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 2000
rack travel mm : 13.50
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 7.60
Tolerance mm : \pm 0.15

Rated speed rpm : 1000

Pressure hPa : 220
rack travel mm : 7.95
Tolerance mm : \pm 0.05

Pressure hPa : 1050
rack travel mm : 11.75
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 335.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 315.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 288.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.20

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.10.94
Test oil : ISO 4113
Combination No. : 0403244039
Injection pump
Pump designation : PES4MM100/720RS1519
: -3
EP type number : 0413204018
Governor
Governor design. : RGV300...1200MW132
: -7
Governor no. : 0420083312
Cust. part No. : 0250748402

Customer spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test Lines : 1680750089
Outside diameter : 8.0

J03

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.50
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 95.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.15
Tolerance mm : ± 0.25

Rated speed rpm : 1254
guide sleeve
travel mm : 7.92
Tolerance mm : ± 0.25

Rated speed rpm : 671
guide sleeve
travel mm : 3.58
Tolerance mm : ± 0.25

Rated speed rpm : 721
guide sleeve
travel mm : 4.06
Tolerance mm : ± 0.25

Rated speed rpm : 970
guide sleeve
travel mm : 5.51
Tolerance mm : ± 0.25

Rated speed rpm : 1690
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 112.0
tolerance degree : ± 4.0

rack travel mm : 10.50
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1365
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.50
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.50
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 290
rack travel mm : 11.25
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 86.0

Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.11.94
Test oil : ISO 4113
Combination No. : 0403246034
Injection pump
Pump designation : PES6MW100/720RS1517
: -2
EP type number : 0413206019
Governor
Governor design. : RQV300...1300MW132
Governor no. : 0420083291
Cust. part No. : 0200744802

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 177.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1680750089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 21.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 14.40
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.02
Tolerance mm : ± 0.25

Rated speed rpm : 1353
guide sleeve
travel mm : 6.70
Tolerance mm : ± 0.25

Rated speed rpm : 1100
guide sleeve
travel mm : 4.76
Tolerance mm : ± 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 2.25
Tolerance mm : ± 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 2.50
Tolerance mm : ± 0.25

Rated speed rpm : 710
guide sleeve
travel mm : 3.03
Tolerance mm : ± 0.25

Rated speed rpm : 1683
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 125
Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 117.0
tolerance degree : ± 4.0

rack travel mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1495
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.40
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 14.40
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.40
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.40
Tolerance mm : + 0.05

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 13.70
Tolerance mm : + 0.10

Pressure hPa : 450
rack travel mm : 11.30
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 200

Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 132.0

Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.94
Test oil : ISO 4113
Combination No. : 0403246041
Injection pump
Pump designation : PES6MW100/720RS1517
: -2
EP type number : 0413206019
Governor
Governor design. : RQV300...1300MW132
: -11
Governor no. : 0420083319
Cust. part No. : 0250748902

Customer spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 177.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1680750089
Outside diameter : 8.0

J10

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.55
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 21.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 14.40
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.02
Tolerance mm : ± 0.25

Rated speed rpm : 1354
guide sleeve
travel mm : 6.71
Tolerance mm : ± 0.25

Rated speed rpm : 1100
guide sleeve
travel mm : 4.76
Tolerance mm : ± 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 2.25
Tolerance mm : ± 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 2.50
Tolerance mm : ± 0.25

Rated speed rpm : 710
guide sleeve
travel mm : 3.03
Tolerance mm : ± 0.25

Rated speed rpm : 1683
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 125
Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1495
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 74.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 11.30
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 200

Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 132.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000s. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.11.94
Test oil : ISO 4113
Combination No. : 0403476108
Injection pump
Pump designation : PES6MW100/320RS1132
EP type number : 0413406124
Governor
Governor design. : RSV325...1400MW2A314
Governor no. : -3
Cust. part No. : 0420085173

Customer-spec. information
Customer : PENTA
Motor : TD 610M
Power KW : 147.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1457413010
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1680750014
Outside diameter : 2.0

x inside diameter : 6.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 2.95
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 11.35
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 97.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 6.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : \pm 4.0

rack travel mm : 10.30
Rated speed rpm : 1280
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1385
Tolerance 1/min : \pm 10

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1575

rack travel mm : 4.00
Rated speed rpm : 1420

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.60

Testing:

Rated speed rpm : 325
rack travel mm : 6.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 620
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 800
rack travel mm : 11.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1000

Pressure hPa : 420
rack travel mm : 11.15
Tolerance mm : \pm 0.15

Pressure hPa : 130
rack travel mm : 10.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.30
Rated speed rpm : 1280
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.11.94
Test oil : ISO 4113
Combination No. : 0403476137
Injection pump
Pump designation : PES6MW100/72ORS1196
: -1
EP type number : 0413406219
Governor
Governor design. : RSV400...1000MW1A333
Governor no. : 0420085118

Cust. part No. : 927 7706

Customer-spec. information
Customer : LIEBHERR
Motor : D 916 T

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413049

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

| | |
|---------------------|--------|
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 3.5 |
| Check tolerance | |
| cm3/1000S. : | 6.0 |
| 2nd speed rpm : | 400 |
| Rack travel in mm : | 5.60 |
| Tolerance mm : | + 0.20 |
| Del. quantity | |
| cm3/1000 strokes : | 18.0 |
| Tolerance | |
| cm3/1000 strokes : | + 2.0 |
| Check tolerance | |
| cm3/1000S. : | + 4.5 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 3.5 |
| Check tolerance | |
| cm3/1000S. : | 5.5 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|---------------------|--------|
| control lever | |
| position degree : | - 3 |
| Rated speed rpm : | 800 |
| Rack travel in mm : | 0.65 |
| Tolerance mm : | + 0.35 |
| governor spring | |
| pre-tension | |
| click setting x : | 5.00 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--------------------|-------|
| Rated speed rpm : | 900 |
| Aneroid pressure | |
| hPa : | - |
| Del. quantity | |
| cm3/1000 strokes : | 118.0 |
| Tolerance | |
| cm3/1000 strokes : | + 1.0 |
| Check tolerance | |
| cm3/1000S. : | + 3.0 |
| Spreed | |
| Tolerance | |
| cm3/1000 strokes : | 3.5 |

| | |
|-----------------|-----|
| Check tolerance | |
| cm3/1000S. : | 6.0 |

RATED SPEED

| | |
|--------------------|--------|
| control lever | |
| position degree : | 98.0 |
| tolerance degree : | + 4.0 |
| rack travel mm : | 10.25 |
| Rated speed rpm : | 925 |
| Tolerance 1/min : | + 5 |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 975 |
| Tolerance 1/min : | + 10 |
| rack travel mm : | 1.00 |
| Tolerance mm : | + 0.70 |
| Rated speed rpm : | 1080 |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 990 |

LOW IDLE

| | |
|--------------------|-------|
| control lever | |
| position degree : | 75.0 |
| tolerance degree : | + 4.0 |

Setting point w/out bumper spring

| | |
|-------------------|------|
| Rated speed rpm : | 400 |
| rack travel mm : | 4.60 |

Testing:

| | |
|-------------------|--------|
| Rated speed rpm : | 400 |
| rack travel mm : | 5.60 |
| Tolerance mm : | + 0.20 |

| | |
|-------------------|-----|
| Rated speed rpm : | 100 |
|-------------------|-----|

| | |
|---------------|---------|
| CRT mm min. : | > 19.00 |
|---------------|---------|

TORQUE CONTROL

| | |
|-------------------|--------|
| Rated speed rpm : | 900 |
| rack travel mm : | 11.25 |
| Tolerance mm : | + 0.05 |

| | |
|-------------------|--------|
| Rated speed rpm : | 500 |
| rack travel mm : | 11.30 |
| Tolerance mm : | + 0.10 |

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 10.25
Rated speed rpm : 925
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.94
Test oil : ISO 4113

Combination No. : 0400876427

Injection pump
Pump designation : PES6A95D410RS2839
EP type number : 0410896894

Governor
Governor design. : RSV325...900A7C720L
Governor no. : 0420232339

Cust. part No. : 0 423 1135 KY150-17

Customer-spec. information
Customer : KHD
Motor : BF6L913C

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

J20

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 68.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 68.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 57.0
tolerance degree : \pm 4.0

rack travel mm : 10.80
Rated speed rpm : 945
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 975
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1100

rack travel mm : 4.00
Rated speed rpm : 995

LOW IDLE

J21

control lever
position degree : 25.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.10

Testing:

Rated speed rpm : 325
rack travel mm : 7.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.15
Tolerance mm : \pm 0.15

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 945
Tolerance 1/min : \pm 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.11.94

Test oil : ISO 4113

Combination No. : 0402640844

Injection pump

Pump designation : PE12P120A520LS7879

EP type number : 0412620841

Governor

Governer design. : RQV350...1200PA1167

Governer no. : 0421814107

Cust. part No. : 0250742402

Customer-spec. information

Customer : MTU

Motor : 12V183-03

Power Kw : 845.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Overflow quantity

min. l/h : 150

Tolerance l/h : + 10.0

Test nozzle holde assembly

: 1688901105

Opening pressure bar

: 208.5

Tolerance bar : + 1.5

Lube oil : 1409918004

J22

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : + 1.0

Prestroke mm : 4.05

Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 0.50

Firing order : 12- 1- 5- 9- 8

: - 3- 4- 11- 10

: - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : + 0.30

Check

tolerance °Nw : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 306.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

2nd speed rpm : 350

Rack travel in mm : 4.00
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.53
Tolerance mm : \pm 0.15

Rated speed rpm : 1281
guide sleeve
travel mm : 8.53
Tolerance mm : \pm 0.20

Rated speed rpm : 990
guide sleeve
travel mm : 5.68
Tolerance mm : \pm 0.25

Rated speed rpm : 420

guide sleeve
travel mm : 2.86
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.42
Tolerance mm : \pm 0.25

Rated speed rpm : 620
guide sleeve
travel mm : 3.89
Tolerance mm : \pm 0.25

Rated speed rpm : 1366
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1470
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1310

Rack travel in mm : 12.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 306.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

RATED SPEED

control lever
position degree : 122.0
tolerance degree : \pm 4.0

rack travel mm : 11.70
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1470

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : $>$ 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.70
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 9.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 5.80
Tolerance mm : \pm 0.15

Pressure hPa : 400
rack travel mm : 7.70
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 6.80
Tolerance mm : \pm 0.10

Pressure hPa : 1600
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Pressure hPa : 1200
rack travel mm : 10.45
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 240
Check
speed 1/min : $>$ 220
Rated speed rpm : $<$ 270
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1245

Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 360.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.00
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 15.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.94
Test oil : ISO 4113

Combination No. : 0402646649

Injection pump
Pump designation : PE6P130A720RS7339
EP type number : 0412636833

Governor
Governor design. : RQV300...950PA905-1
Governor no. : 0421814097

Cust. part No. :

Customer spec. information
Customer : IVECO-AIFO
Motor : 8210.SRI
Power KW : 353.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 14.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 338.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

2nd speed rpm : 300

Rack travel in mm : > 4.70
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.81
Tolerance mm : \pm 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 7.75
Tolerance mm : \pm 0.15

Rated speed rpm : 409
guide sleeve
travel mm : 2.86
Tolerance mm : \pm 0.25

Rated speed rpm : 459
guide sleeve
travel mm : 3.29
Tolerance mm : \pm 0.25

Rated speed rpm : 720
guide sleeve
travel mm : 4.94
Tolerance mm : \pm 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1090

Rack travel in mm : 12.90
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 338.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 114.0
tolerance degree : \pm 4.0

rack travel mm : 12.90
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1200

rack travel mm : 4.00

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 6.20

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 430

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.95
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 10.75
Tolerance mm : \pm 0.10

Pressure hPa : 520
rack travel mm : 12.95
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : $>$ 4.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 7.0
Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.11.94
Test oil : ISO 4113
Combination No. : 0402646993
Injection pump
Pump designation : PE6P120A320LS7852-1
EP type number : 0412626910

Governor
Governor design. : RQ300/1050PA1030-18
Governor no. : 0421801746

Cust. part No. : 0230744502

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
: -300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.66
Tolerance mm : ± 0.10

Rated speed rpm : 1109
guide sleeve
travel mm : 6.36
Tolerance mm : ± 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 401
guide sleeve
travel mm : 4.01
Tolerance mm : ± 0.10

Rated speed rpm : 510

K02

guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1280
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : ± 4.0

rack travel mm : 13.40
Rated speed rpm : 1103
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : ± 20

Rated speed rpm : 200

CRT mm min. : > 8.30

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.40
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 14.40
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 13.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 14.40
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.35
Tolerance mm : ± 0.20

Rated speed rpm : 400

Pressure hPa : 550
rack travel mm : 13.60
Tolerance mm : ± 0.10

Pressure hPa : 250

rack travel mm : 11.45
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100

Check
speed 1/min : > 80

Rated speed rpm : < 220

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 208.5

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1103
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 15.11.94

Test oil : ISO 4113

Combination No. : 0402646996

Injection pump

Pump designation : PE6P120A320LS7852

EP type number : 0412626871

Governor

Governer design. : RQ300/1050PA1031-4

Governer no. : 0421801656

Cust. part No. : 0230744702

Customer-spec. information

Customer : MB-NFZ

Motor : OM441 LA

Power KW : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : + 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110

Tolerance l/h : + 10.0

Test nozzle holde assembly

: 1688901105

Opening pressure

bar : 208.5

Tolerance bar : + 1.5

Lube oil : 1409918004

K05

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : + 1.0

Prestroke mm : 5.25

Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 20.50

Tolerance mm : + 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance : + 0.30

Check

tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.13
Tolerance mm : \pm 0.10

Rated speed rpm : 1095
guide sleeve
travel mm : 6.55
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 913

guide sleeve
travel mm : 6.05
Tolerance mm : \pm 0.10

Rated speed rpm : 413
guide sleeve
travel mm : 4.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 945
guide sleeve
travel mm : 6.15
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 13.40
Rated speed rpm : 1098

Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1195

Tolerance 1/min : + 15

rack travel mm : 0.75

Tolerance mm : + 0.75

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 71.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 3.50

Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 340

Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 5.70

TORQUE CONTROL

Rated speed rpm : 550

rack travel mm : 14.40

Tolerance mm : + 0.05

Rated speed rpm : 1050

rack travel mm : 14.40

Tolerance mm : + 0.10

Rated speed rpm : 400

rack travel mm : 13.60

Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400

Pressure hPa : 1100

rack travel mm : 14.40

Tolerance mm : + 0.05

MEASUREMENT

K07

Pressure hPa : -

Rated speed rpm : 400

rack travel mm : 10.35

Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 550

rack travel mm : 13.60

Tolerance mm : + 0.10

Pressure hPa : 250

rack travel mm : 11.45

Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100

Check

speed 1/min : > 80

Rated speed rpm : < 220

Check

speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1100

Rated speed rpm : 1050

Del. quantity

cm³/1000 strokes : 240.0

Tolerance

cm³/1000 strokes : + 2.0

Check tolerance

cm³/1000S. : + 5.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

Aneroid pressure

hPa : 550

Rated speed rpm : 400

Del. quantity

cm³/1000 strokes : 208.5

Tolerance

cm³/1000 strokes : + 1.5

Check tolerance

cm³/1000S. : + 4.5

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1098
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 265.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.11.94
Test oil : ISO 4113

Combination No. : 0402646998

Injection pump
Pump designation : PE6P120A320LS7852
EP type number : 0412626871

Governor
Governor design. : RGV300...1050PA1033
:-6
Governor no. : 0421814009

Cust. part No. : 0230744602

Customer-spec. information
Customer : MB-NFZ
Motor : OM441 LA
Power Kw : 250.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1-

Phasing : 0-60-120-180-240
:-300-360
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 248.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1170

Rack travel in mm : 13.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 248.0

K10

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : \pm 4.0

rack travel mm : 13.40
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : \pm 15

rack travel mm : 0.75
Tolerance mm : \pm 0.75
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : > 8.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 14.40
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 13.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1100
rack travel mm : 14.40
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.35
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 550
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 11.45
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 240
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 550
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 208.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.11.94
Test oil : ISO 4113

Combination No. : 04026489478

Injection pump
Pump designation : PE8P120A320LS7859
EP type number : 0412628869

Governor
Governor design. : RQ300/950PA1032-5
Governor no. : 0421801668

Cust. part No. : 0230749602

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 320.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 15.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550

Ref. pressure
ALDA / ADA hPa : 1000

Del. quantity
cm³/1000 strokes : 254.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

FULL-LOAD DELIVERY AT LDA

Rated speed rpm : 400

Aneroid pressure
hPa : 550

Del. quantity
cm³/1000 strokes : 205.0

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 4.5

RATED SPEED

control lever
position degree : 97.0

rack travel mm : 14.00
Tolerance 1/min : + 8

Rated speed rpm : 998

rack travel mm : 4.00
Rated speed rpm : 1090

Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

SET IDLE AUXILIARY SPRING

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 435
Tolerance 1/min : + 20

Load pick-up

Rated speed rpm : 200

CRT mm min. : > 8.00

rack travel mm : 5.20
Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 15.00
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 15.00
Tolerance mm : \pm 0.05

ADJUSTMENT TEST ADA/ALDA

MEASUREMENT

Pressure hPa : 250
rack travel mm : 11.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 220
Check
speed 1/min : $>$ 240

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1000
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 241.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Ref. pressure
ALDA / ADA hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Full load CRT mm : 14.00
Rated speed rpm : 998
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.30

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 97.0

Adjustment of the control-rod travel
sensor

control lever
position degree : 97.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.94

Test oil : ISO 4113

Combination No. : 0402746985

Injection pump
Pump designation : PES6P120A720RS7224

EP type number : 0412726893

Governor
Governor design. : RQ275/1050PA1021-2
Governor no. : 0421801676

Cust. part No. :

Customer-spec. information

Customer : IVECO-UNIC

Motor : 8460.41.721

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 189.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.10
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 189.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1103

Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1160

Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

Testing:

Rated speed rpm : 275
rack travel mm : 5.10

Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 355

Tolerance 1/min : ± 20

Rated speed rpm : 100

CRT mm min. : > 6.60

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 10.85

Tolerance mm : ± 0.05

Rated speed rpm : 550
rack travel mm : 10.85

Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

rack travel mm : 10.85
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 8.35
Tolerance mm : \pm 0.10

Pressure hPa : 430
rack travel mm : 9.95
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 215
Check
speed 1/min : $<$ 235

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1103
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.94

Test oil : ISO 4113

Combination No. : 0402746997

Injection pump
Pump designation : PES6P120A72ORS7224
: -2

EP type number : 0412726893

Governor
Governor design. : RQV275...1100PA975
: -3K

Governor no. : 0421815350

Cust. part No. :

Customer spec. information

Customer : IVECO-AIFO

Motor : 8361 SRM 40.10

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2417413076

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 218.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.50
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.00
Tolerance mm : ± 0.20

Rated speed rpm : 1150
guide sleeve
travel mm : 10.45
Tolerance mm : ± 0.15

Rated speed rpm : 764
guide sleeve
travel mm : 6.24
Tolerance mm : ± 0.25

Rated speed rpm : 430
guide sleeve
travel mm : 3.63
Tolerance mm : ± 0.25

Rated speed rpm : 1350

K20

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1210

Rack travel in mm : 10.70
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 218.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 120.0
tolerance degree : ± 4.0

rack travel mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 6.70

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 12.75
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : 11.40
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 900
Pressure hPa : 410
rack travel mm : 8.80
Tolerance mm : \pm 0.20

Pressure hPa : 750

K21

rack travel mm : 11.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 170
Check
speed 1/min : $>$ 150
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.11.94
Test oil : ISO 4113

Combination No. : 0403456115

Injection pump
Pump designation : PES6MW100/321RS1215
EP type number : 0413406205

Governor
Governor design. : RQ250/1200MW84-7
Governor no. : 0420082055

Cust. part No. : 3-7126

Customer spec. information
Customer : MAN
Motor : D 0826 LUH 01
Power kW : 199.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0
x inside diameter : 2.0

K23

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 171.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 2.02
Tolerance mm : + 0.10

Rated speed rpm : 1257
guide sleeve
travel mm : 6.64
Tolerance mm : + 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 6.30
Tolerance mm : + 0.10

Rated speed rpm : 955
guide sleeve
travel mm : 6.08
Tolerance mm : + 0.10

Rated speed rpm : 373
guide sleeve
travel mm : 4.43
Tolerance mm : + 0.10

Rated speed rpm : 480
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1430

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

Rated speed rpm : 1099
guide sleeve
travel mm : 6.23
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1400
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : + 4.0

rack travel mm : 13.20
Rated speed rpm : 1253
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 7.00
Tolerance mm : \pm 0.20

Rated speed rpm : 150

CRT mm min. : $>$ 8.50

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 14.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 14.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 13.50
Tolerance mm : \pm 0.15

Pressure hPa : 270

rack travel mm : 10.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 178.0
Tolerance

cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 172.0
Tolerance

cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1400
Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 79.0
Tolerance

cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 1253
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113

Combination No. : 0402076755

Injection pump
Pump designation : PES6P110A320LS3318
EP type number : 0412016741

Governor
Governor design. : RSV350...750P4A561
Governor no. : 0421833406

Cust. part No. : 1820271C91

Customer spec. information
Customer : NAVISTAR
Motor : DTA-466
Power KW : 185.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413058

Inlet press. bar : 2.8

Overflow quantity
min. l/h : 185
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

K27

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 219.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 42.0
tolerance degree : + 4.0

rack travel mm : 11.50

Rated speed rpm : 755
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 795
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

rack travel mm : 4.00
Rated speed rpm : 800

LOW IDLE

control lever
position degree : 22.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : + 0.05

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 755
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 155.0

Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 25.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113

Combination No. : 0402076756

Injection pump
Pump designation : PES6P100A320LS3317
EP type number : 0412006706

Governor
Governor design. : RSV400...1200P5A587
Governor no. : 0421833446

Cust. part No. : 1820269C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-466
Power KW : 204.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413058

Inlet press. bar : 2.8

Overflow quantity
min. l/h : 185
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

L02

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 14.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 176.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 176.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 55.0
tolerance degree : ± 4.0

rack travel mm : 13.60

L03

Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 25.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 14.65
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1500
rack travel mm : 14.65
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.40
Tolerance mm : ± 0.20

Rated speed rpm : 1200

Pressure hPa : 650
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 9.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.60
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113

Combination No. : 0402076760

Injection pump
Pump designation : PES6P100A320LS3317
EP type number : 0412006706

Governor
Governor design. : RSV415...1100P8A577
Governor no. : 0421833433

Cust. part No. : 1818694C91

Customer spec. information
Customer : NAVISTAR
Motor : DT-531
Power KW : 145.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413058

Inlet press. bar : 2.8

Overflow quantity
min. l/h : 260
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

L05

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 138.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 52.0

L06

tolerance degree : ± 4.0

control lever
position degree : 102.0
tolerance degree : ± 6.0

rack travel mm : 11.40
Rated speed rpm : 1150
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1205

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 6.0

control lever
position degree : 21.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 415
rack travel mm : 5.30
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.75

Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 9.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113

Combination No. : 0402076761

Injection pump
Pump designation : PES6P100A320LS3317
EP type number : 0412006706

Governor
Governor design. : RSV415...1100P8A576
Governor no. : 0421833432

Cust. part No. : 1817593C91

Customer-spec. information
Customer : NAVISTAR
Motor : DT-531
Power KW : 161.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1417413058

Inlet press. bar : 2.8

Overflow quantity
min. l/h : 260
Tolerance l/h : + 10.0

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750015

L08

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.00
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 51.0
tolerance degree : \pm 4.0

control lever
position degree : 101.0
tolerance degree : \pm 6.0

rack travel mm : 12.10
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 6.0

control lever
position degree : 22.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 415
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 13.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 540
rack travel mm : 11.90
Tolerance mm : \pm 0.20

Pressure hPa : 250
rack travel mm : 9.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113

Combination No. : 0402076763

Injection pump
Pump designation : PES6P100A320LS3317
EP type number : 0412006706

Governor
Governor design. : RSV415...1100P8A579
Governor no. : 0421833435

Cust. part No. : 1822012C91

Customer-spec. information
Customer : NAVISTAR
Motor : DT-466
Power KW : 134.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413058

Inlet press. bar : 2.8

Overflow quantity
min. l/h : 260
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750015

L11

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.00
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 125.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 125.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 55.0
tolerance degree : + 4.0

control lever
position degree : 105.0
tolerance degree : + 6.0

rack travel mm : 11.20
Rated speed rpm : 1160
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 6.0

control lever
position degree : 24.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 415
rack travel mm : 5.40
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.35
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

rack travel mm : 8.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 440
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 9.75
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 81.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113

Combination No. : 0402776814

Injection pump
Pump designation : PES6P120A320LS7285
EP type number : 0412726892

Governor
Governor design. : RSV350...1000P4A564
Governor no. : 0421833413

Cust. part No. : 1821048C91

Customer spec. information
Customer : NAVISTAR
Motor : DTA-531
Power kW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2417413076

Inlet press. bar : 2.8

Overflow quantity
min. l/h : 180
Tolerance l/h : + 10.0

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1680750008

L14

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.90
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

S.o.d. blocking
Barrel no. : 1
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.85
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 201.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 201.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 59.0
tolerance degree : + 4.0

rack travel mm : 11.80

Rated speed rpm : 1055
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1105
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

rack travel mm : 4.00
Rated speed rpm : 1110

LOW IDLE

control lever
position degree : 23.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.90
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.85
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1500
rack travel mm : 12.85
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 7.90
Tolerance mm : + 0.20

Rated speed rpm : 1000

Pressure hPa : 850
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 8.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 87.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1055
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0403466148
Injection pump
Pump designation : PES6MW100/120RS1137
: -3
EP type number : 0413406236
Governor
Governor design. : RSV550...1100MW2A335
: -8
Governor no. : 0420085244
Cust. part No. : 392 9184

Customer-spec. information
Customer : CDC
Motor : 6CTA-830/2188E
Power KW : 209.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417433047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1
S.o.d. blocking
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 172.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

2nd speed rpm : 550

Rack travel in mm : 6.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.55
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 172.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 92.0
tolerance degree : ± 4.0

rack travel mm : 13.60
Rated speed rpm : 1180
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1280

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 550
rack travel mm : 6.10
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : ± 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.60

Tolerance mm : \pm 0.05
Rated speed rpm : 750
rack travel mm : 15.40
Tolerance mm : \pm 0.20

Rated speed rpm : 1000
rack travel mm : 15.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 15.40
Tolerance mm : \pm 0.20

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 620
rack travel mm : 13.30
Tolerance mm : \pm 0.20

Pressure hPa : 470
rack travel mm : 12.10
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 181.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.5
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.60
Rated speed rpm : 1180
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 550
rack travel mm : 6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 08.12.94
Test oil : ISO 4113
Combination No. : 0400464103
Injection pump
Pump designation : PES4A80D410/3RS1300
EP type number : 0410484015
Governor
Governor design. : RSV325...1150A8C657L
Governor no. : 0420232326

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F4L912

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

L20

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 50.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

2nd speed rpm : 325

Rack travel in mm : 8.80
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 12.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 3.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : \pm 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 50.5
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 2.0
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 3.5

RATED SPEED

control lever
 position degree : 103.0
 tolerance degree : \pm 4.0
 rack travel mm : 9.60
 Rated speed rpm : 1185
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1225
 Tolerance 1/min : \pm 15

rack travel mm : 1.00
 Tolerance mm : \pm 0.70
 Rated speed rpm : 1380

rack travel mm : 4.00
 Rated speed rpm : 1240

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 8.30

Testing:

Rated speed rpm : 325
 rack travel mm : 8.80
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 490
 Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1150
 rack travel mm : 10.65
 Tolerance mm : \pm 0.05

Rated speed rpm : 930
 rack travel mm : 11.15
 Tolerance mm : \pm 0.15

Rated speed rpm : 500
 rack travel mm : 11.65
 Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1185
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 8.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113
Combination No. : 0400646268
Injection pump
Pump designation : PE6A95D41ORS2525
EP type number : 0410696987
Governor
Governor design. : RQ225/1200AB1156L
Governor no. : 0420200079

Cust. part No. :

Customer-spec. information
Customer : DAF
Motor : DH 825

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test Lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

L23

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 9.00
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.
mm : 9.00
Tolerance mm : + 0.50
Difference ° CS : 3.50
Tolerance : + 0.50

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 74.0

| | |
|-------------------------------|---------|
| Tolerance | |
| cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance | |
| cm ³ /1000S. | : ± 3.0 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 3.5 |
| Check tolerance | |
| cm ³ /1000S. | : 8.0 |
| Del. quantity | |
| cm ³ /1000 strokes | : 9.0 |
| Tolerance | |
| cm ³ /1000 strokes | : ± 2.0 |
| Check tolerance | |
| cm ³ /1000S. | : ± 4.5 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 5.5 |
| Check tolerance | |
| cm ³ /1000S. | : 9.0 |

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|-------------------|----------|
| Rated speed rpm | : 650 |
| Rack travel in mm | : 20.00 |
| Tolerance mm | : ± 0.80 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|-------------------------------|---------|
| Rated speed rpm | : 1200 |
| Aneroid pressure | |
| hPa | : - |
| Del. quantity | |
| cm ³ /1000 strokes | : 74.0 |
| Tolerance | |
| cm ³ /1000 strokes | : ± 1.0 |
| Check tolerance | |
| cm ³ /1000S. | : ± 3.0 |
| Spread | |
| Tolerance | |
| cm ³ /1000 strokes | : 3.5 |
| Check tolerance | |
| cm ³ /1000S. | : 8.0 |

RATED SPEED

| | |
|-----------------|----------|
| rack travel mm | : 9.40 |
| Rated speed rpm | : 1253 |
| Tolerance 1/min | : ± 8 |
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1315 |
| Tolerance 1/min | : ± 15 |
| rack travel mm | : 0.50 |
| Tolerance mm | : ± 0.50 |
| Rated speed rpm | : 1400 |

LOW IDLE

Testing:

| | |
|-----------------|----------|
| Rated speed rpm | : 225 |
| rack travel mm | : 6.00 |
| Tolerance mm | : ± 0.10 |
| rack travel mm | : 2.00 |
| Rated speed rpm | : 365 |
| Tolerance 1/min | : ± 20 |
| Rated speed rpm | : 100 |
| CRT mm min. | : > 7.50 |
| Rated speed rpm | : 490 |
| CRT mm max. | : < 1.00 |

TORQUE CONTROL

| | |
|-----------------|----------|
| Dimension a mm | : 0.50 |
| Rated speed rpm | : 1035 |
| rack travel mm | : 11.00 |
| Tolerance mm | : ± 0.10 |
| Rated speed rpm | : 1100 |
| rack travel mm | : 10.65 |
| Tolerance mm | : ± 0.15 |
| Rated speed rpm | : 1200 |
| rack travel mm | : 10.45 |
| Tolerance mm | : ± 0.05 |
| Rated speed rpm | : 650 |
| rack travel mm | : 11.75 |
| Tolerance mm | : ± 0.05 |
| Rated speed rpm | : 800 |
| rack travel mm | : 11.15 |
| Tolerance mm | : ± 0.10 |

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.40
Rated speed rpm : 1253
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 9.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 09.10.91
Test oil : ISO 4113
Combination No. : 0400866145AK
Injection pump
Pump designation : PES6A1000320/3RS2691
EP type number : 9410230025

Governor
Governor design. : RSV400...1100AOC2190
: -35R
Governor no. : 0420233242

Cust. part No. :

Customer spec. information
Customer : CDC
Motor : 6 C 8.3 l
Power KW : 112.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901017

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.85
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 108.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 3.0

| | |
|--------------------|-----|
| <hr/> | |
| Speed | |
| Tolerance | |
| cm3/1000 strokes : | 4.0 |
| <hr/> | |
| Check tolerance | |
| cm3/1000S. : | 6.5 |

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

| | |
|---------------------|--------|
| control lever | |
| position degree : | - 3 |
| Rated speed rpm : | 800 |
| | |
| Rack travel in mm : | 0.50 |
| Tolerance mm : | + 0.20 |
| | |
| governor spring | |
| pre-tension | |
| click setting x : | 4.25 |

FULL LOAD DELIVERY AT FULL LOAD STOP

| | |
|--------------------|-------|
| Rated speed rpm : | 1200 |
| Aneroid pressure | |
| hPa : | - |
| Del. quantity | |
| cm3/1000 strokes : | 108.0 |
| Tolerance | |
| cm3/1000 strokes : | + 0.5 |
| Check tolerance | |
| cm3/1000S. : | + 3.0 |
| Speed | |
| Tolerance | |
| cm3/1000 strokes : | 4.0 |
| Check tolerance | |
| cm3/1000S. : | 6.5 |

RATED SPEED

| | |
|--------------------|-------|
| control lever | |
| position degree : | 99.0 |
| tolerance degree : | + 4.0 |
| | |
| rack travel mm : | 10.40 |
| Rated speed rpm : | 1245 |
| Tolerance 1/min : | + 5 |
| | |
| rack travel mm : | 4.00 |
| Rated speed rpm : | 1315 |

| | |
|-------------------|--------|
| Tolerance 1/min : | + 15 |
| rack travel mm : | 0.85 |
| Tolerance mm : | + 0.55 |
| Rated speed rpm : | 1470 |

LOW IDLE

| | |
|--------------------|-------|
| control lever | |
| position degree : | 74.0 |
| tolerance degree : | + 4.0 |

Setting point w/out bumper spring

| | |
|-------------------|------|
| Rated speed rpm : | 400 |
| rack travel mm : | 5.90 |

Testing:

| | |
|-------------------|--------|
| Rated speed rpm : | 400 |
| rack travel mm : | 5.40 |
| Tolerance mm : | + 0.10 |

| | |
|-------------------|------|
| rack travel mm : | 2.00 |
| Rated speed rpm : | 550 |
| Tolerance 1/min : | + 30 |

| | |
|-------------------|-----|
| Rated speed rpm : | 100 |
|-------------------|-----|

| | |
|---------------|---------|
| CRT mm min. : | > 19.00 |
|---------------|---------|

TORQUE CONTROL

| | |
|-------------------|--------|
| Rated speed rpm : | 1200 |
| rack travel mm : | 11.35 |
| Tolerance mm : | + 0.05 |

| | |
|-------------------|--------|
| Rated speed rpm : | 500 |
| rack travel mm : | 11.40 |
| Tolerance mm : | + 0.10 |

BREAKAWAY

| | |
|---------------------|-------|
| Rack travel in mm : | 10.40 |
| Rated speed rpm : | 1245 |
| Tolerance 1/min : | + 5 |

STARTING FUEL DELIVERY

| | |
|-------------------|-----|
| Rated speed rpm : | 100 |
|-------------------|-----|

rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113
Combination No. : 0400876378
Injection pump
Pump designation : PES6A95D32ORS2693
EP type number : 0410896914
Governor
Governor design. : RSV300...1300AOC2248
Governor no. : 0420233274

Cust. part No. :

Customer spec. information
Customer : DAF
Motor : NT 133
Power kW : 133.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0681343009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1680750015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 9.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.
mm : 9.00
Tolerance mm : ± 0.50
Difference ° CS : 3.00
Tolerance : ± 0.50

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 77.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 300

Rack travel in mm : 6.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 8.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 77.0

M02

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : ± 4.0

rack travel mm : 9.50
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1405
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1570

rack travel mm : 4.00
Rated speed rpm : 1425

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.95

Testing:

Rated speed rpm : 300
rack travel mm : 6.40
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1070

| | | |
|-----------------|---|--------|
| rack travel mm | : | 11.20 |
| Tolerance mm | : | ± 0.15 |
| Rated speed rpm | : | 850 |
| rack travel mm | : | 11.45 |
| Tolerance mm | : | ± 0.05 |
| Rated speed rpm | : | 1290 |
| rack travel mm | : | 10.55 |
| Tolerance mm | : | ± 0.10 |

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

| | | |
|-----------------|---|--------|
| Rated speed rpm | : | 600 |
| Pressure hPa | : | 700 |
| rack travel mm | : | 11.45 |
| Tolerance mm | : | ± 0.05 |

MEASUREMENT

| | | |
|-----------------|---|--------|
| Pressure hPa | : | - |
| Rated speed rpm | : | 600 |
| rack travel mm | : | 10.20 |
| Tolerance mm | : | ± 0.10 |

| | | |
|-----------------|---|-----|
| Rated speed rpm | : | 600 |
|-----------------|---|-----|

| | | |
|----------------|---|--------|
| Pressure hPa | : | 160 |
| rack travel mm | : | 10.75 |
| Tolerance mm | : | ± 0.05 |

FUEL DELIVERY CHARACTERISTICS

| | | |
|-------------------------------|---|-------|
| Aneroid pressure | : | |
| hPa | : | 700 |
| Rated speed rpm | : | 1290 |
| Del. quantity | : | |
| cm ³ /1000 strokes | : | 74.0 |
| Tolerance | : | |
| cm ³ /1000 strokes | : | ± 2.0 |
| Check tolerance | : | |
| cm ³ /1000S. | : | ± 4.0 |

| | | |
|-------------------------------|---|-------|
| Aneroid pressure | : | |
| hPa | : | - |
| Rated speed rpm | : | 600 |
| Del. quantity | : | |
| cm ³ /1000 strokes | : | 51.0 |
| Tolerance | : | |
| cm ³ /1000 strokes | : | ± 1.0 |
| Check tolerance | : | |
| cm ³ /1000S. | : | ± 3.0 |

BREAKAWAY

| | | |
|-------------------|---|------|
| Rack travel in mm | : | 9.50 |
| Rated speed rpm | : | 1345 |
| Tolerance 1/min | : | ± 5 |

LOW IDLE

| | | |
|-------------------------------|---|--------|
| Rated speed rpm | : | 300 |
| rack travel mm | : | 6.40 |
| Tolerance mm | : | ± 0.10 |
| Del. quantity | : | |
| cm ³ /1000 strokes | : | 8.0 |
| Tolerance | : | |
| cm ³ /1000 strokes | : | ± 2.0 |
| Check tolerance | : | |
| cm ³ /1000S. | : | ± 4.5 |
| Speed | : | |
| Tolerance | : | |
| cm ³ /1000 strokes | : | 5.5 |
| Check tolerance | : | |
| cm ³ /1000S. | : | 9.0 |

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.12.94
Test oil : ISO 4113
Combination No. : 0400876379
Injection pump
Pump designation : PES6A95D320RS2693
EP type number : 0410896914
Governor
Governor design. : RSV300...1300AOC2248
: -3R
Governor no. : 0420233275
Cust. part No. :

Customer spec. information
Customer : DAF
Motor : NT 133
Power KW : 133.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1419992198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1680750015
Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.05
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 9.00
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav.
mm : 9.00
Tolerance mm : + 0.50
Difference ° CS : 3.00
Tolerance : + 0.50

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 11.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 77.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 300

Rack travel in mm : 6.50

Del. quantity
cm³/1000 strokes : 9.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 77.0

Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 108.0
tolerance degree : ± 4.0

rack travel mm : 9.55
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1415
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1570

rack travel mm : 4.00
Rated speed rpm : 1445

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 6.00

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 620
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 950

| | | |
|-----------------|---|--------|
| rack travel mm | : | 11.45 |
| Tolerance mm | : | ± 0.10 |
| Rated speed rpm | : | 1050 |
| rack travel mm | : | 10.90 |
| Tolerance mm | : | ± 0.15 |
| Rated speed rpm | : | 850 |
| rack travel mm | : | 11.55 |
| Tolerance mm | : | ± 0.05 |
| Rated speed rpm | : | 1290 |
| rack travel mm | : | 10.55 |
| Tolerance mm | : | ± 0.10 |

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

| | | |
|-----------------|---|--------|
| Rated speed rpm | : | 600 |
| Pressure hPa | : | 700 |
| rack travel mm | : | 11.45 |
| Tolerance mm | : | ± 0.05 |

MEASUREMENT

| | | |
|-----------------|---|--------|
| Pressure hPa | : | - |
| Rated speed rpm | : | 600 |
| rack travel mm | : | 10.20 |
| Tolerance mm | : | ± 0.10 |

| | | |
|-----------------|---|-----|
| Rated speed rpm | : | 600 |
|-----------------|---|-----|

| | | |
|----------------|---|--------|
| Pressure hPa | : | 160 |
| rack travel mm | : | 10.75 |
| Tolerance mm | : | ± 0.05 |

FUEL DELIVERY CHARACTERISTICS

| | | |
|-------------------------------|---|-------|
| Aneroid pressure | | |
| hPa | : | 700 |
| Rated speed rpm | : | 1290 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 74.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | ± 2.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | ± 4.0 |

| | | |
|-------------------------------|---|------|
| Aneroid pressure | | |
| hPa | : | - |
| Rated speed rpm | : | 600 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 51.0 |

| | | |
|-------------------------------|---|-------|
| Tolerance | | |
| cm ³ /1000 strokes | : | ± 1.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | ± 3.0 |

BREAKAWAY

| | | |
|-------------------|---|------|
| Rack travel in mm | : | 9.55 |
| Rated speed rpm | : | 1345 |
| Tolerance 1/min | : | ± 5 |

LOW IDLE

| | | |
|-------------------------------|---|-------|
| Rated speed rpm | : | 300 |
| rack travel mm | : | 6.50 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 9.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | ± 2.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | ± 4.5 |
| Speed | | |
| Tolerance | | |
| cm ³ /1000 strokes | : | 5.5 |
| Check tolerance | | |
| cm ³ /1000S. | : | 9.0 |

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0400876425

Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0410896888

Governor
Governor design. : RSV400...1050A2C2263
: -7L
Governor no. : 0420232606

Cust. part No. : 87 840 866

Customer spec. information
Customer : FMH-GEOTECH
Motor : 7.5 L
Power KW : 149.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1419992198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Start-of-delivery blocking at start of delivery of cylinder no. 1.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 123.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 650

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 123.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 97.0
tolerance degree : \pm 4.0

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 650
rack travel mm : 4.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 750
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.20
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Rated speed rpm : 1050
rack travel mm : 11.70
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.60
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 7.80
 Tolerance mm : + 0.05

Rated speed rpm : 500

Pressure hPa : 800
 rack travel mm : 12.00
 Tolerance mm : + 0.20

Pressure hPa : 625
 rack travel mm : 10.00
 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 850
 Del. quantity
 cm³/1000 strokes : 142.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 69.5
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.25
 Tolerance mm : + 0.75
 Del. quantity
 cm³/1000 strokes : 155.0
 Tolerance
 cm³/1000 strokes : + 8.0
 Check tolerance
 cm³/1000S. : + 11.0

LOW IDLE

Rated speed rpm : 650
 rack travel mm : 4.70
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94
Test oil : ISO 4113
Combination No. : 0401840769
Injection pump
Pump designation : PE12P120A520/4LS3854
EP type number : 0411820728

Governor
Governor design. : RQ750PA933
Governor no. : 0421801495

Cust. part No. : 2-7978

Customer-spec. information
Customer : MAN
Motor : D2842LE
Power KW : 380.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

M10

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8
 : - 3- 4- 11- 10
 : - 2- 6- 7

Phasing : 0-45-60-105-120
 : -165-180-225-240
 : -285-300-345
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 216.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 760
guide sleeve
travel mm : 4.10
Tolerance mm : \pm 0.25

Rated speed rpm : 832
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 890
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

LOW IDLE

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.05

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.12.94

Test oil : ISO 4113

Combination No. : 0401840770

Injection pump

Pump designation : PE12P120A520/4LS3854

EP type number : 0411820728

Governor

Governer design. : RQ750PA947-1

Governer no. : 0421801587

Cust. part No. : 2-7981

Customer-spec. information

Customer : MAN

Motor : D2842LE 21

Power KW : 443.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Test nozzle holde
assembly

: 1688901019

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 4.25

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 12- 1- 5- 9- 8

: - 3- 4- 11- 10

: - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : ± 0.35

Check

tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.05

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 760
guide sleeve
travel mm : 3.41
Tolerance mm : ± 0.25

Rated speed rpm : 550
guide sleeve
travel mm : -5.77
Tolerance mm : ± 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 17.48
Tolerance mm : ± 0.25

Rated speed rpm : 839
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 251.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

LOW IDLE

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : ± 0.05

LOW IDLE

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0401840776
Injection pump
Pump designation : PE12P120A520/4LS3854
EP type number : 0411820728
Governor
Governor design. : RQ900PA1196
Governor no. : 0421801753

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2842LE
Power KW : 260.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1417413025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1688901105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Lube oil : 1409918004
Test lines : 1680750089
Outside diameter : 8.0

M14

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.25
Tolerance mm : + 0.05
test only : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 12- 1- 5- 9- 8
 : - 3- 4- 11- 10
 : - 2- 6- 7

Phasing : 0-45-60-105-120
 : -165-180-225-240
 : -285-300-345
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 12

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 12.50
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 230.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 90.0
tolerance degree : ± 4.0

M15

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.50
Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 09.12.94
Test oil : ISO 4113

Combination No. : 0401846938

Injection pump
Pump designation : PE6P110A320RS3266
EP type number : 0411816777

Governor
Governor design. : RQV300...1300PA996
 : -1K
Governor no. : 0421815278

Cust. part No. : 420803-P04

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD63E
Power KW : 133.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2417413046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 8.60
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 780

Rack travel in mm : 10.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 330
guide sleeve
travel mm : 1.50
Tolerance mm : ± 0.25

Rated speed rpm : 1374
guide sleeve
travel mm : 9.97
Tolerance mm : ± 0.25

Rated speed rpm : 1000
guide sleeve
travel mm : 5.68
Tolerance mm : ± 0.25

Rated speed rpm : 411
guide sleeve
travel mm : 2.64
Tolerance mm : ± 0.25

Rated speed rpm : 461
guide sleeve
travel mm : 3.10
Tolerance mm : ± 0.25

Rated speed rpm : 610
guide sleeve
travel mm : 3.59
Tolerance mm : ± 0.25

Rated speed rpm : 1483
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1580

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1470

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 780
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 54.0
tolerance degree : ± 4.0

control lever
position degree : 118.0
tolerance degree : ± 4.0

rack travel mm : 10.40
Rated speed rpm : 1365
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1435
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1520

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 330
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 7.00

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 780
rack travel mm : 10.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1300
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 10.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 1200
rack travel mm : 11.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1300
rack travel mm : 8.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1300

Pressure hPa : 650
rack travel mm : 2.40
Tolerance mm : \pm 0.20

Pressure hPa : 130
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 780
Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 8.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.12.94
Test oil : ISO 4113
Combination No. : 0401846988
Injection pump
Pump designation : PE6P110A320RS3108Y
EP type number : 0411816729
Governor
Governor design. : RQV250...1100PA920
: -7
Governor no. : 0421814103
Cust. part No. : 425661 P01

Customer spec. information
Customer : VOLVO-TRUCK
Motor : THD100GC
Power kW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2417413046
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 0681343009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1680750089
Outside diameter : 8.0

M20

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 139.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.19
Tolerance mm : + 0.25

Rated speed rpm : 1176
guide sleeve
travel mm : 8.28
Tolerance mm : + 0.25

Rated speed rpm : 1090
guide sleeve
travel mm : 6.94
Tolerance mm : + 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : + 0.25

Rated speed rpm : 437
guide sleeve
travel mm : 3.71
Tolerance mm : + 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : + 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

RATED SPEED

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 118.0
tolerance degree : + 4.0

rack travel mm : 10.15
Rated speed rpm : 1165
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 63.0
tolerance degree : + 4.0

control lever
position degree : 10.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 150

CRT mm min. : $>$ 6.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 330

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.70
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 430
rack travel mm : 1.00
Tolerance mm : \pm 0.15

Pressure hPa : 265
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.15
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.70
Tolerance mm : \pm 0.15
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113

Combination No. : 0401849738

Injection pump
Pump designation : PE10P120A320LS3824
: -10
EP type number : 0411829701

Governor
Governor design. : RQV300...1150PA867
Governor no. : 0421813630

Cust. part No. : 0160743402

Customer spec. information
Customer : MB-NFZ
Motor : OM 423 LA
Power KW : 386.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 4.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 10

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

2nd speed rpm : 300

Rack travel in mm : 5.10
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.50
Tolerance mm : ± 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 8.70
Tolerance mm : ± 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 6.50
Tolerance mm : ± 0.10

Rated speed rpm : 1250

guide sleeve
travel mm : 9.80
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1185

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 195.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

RATED SPEED

control lever
position degree : 121.0
tolerance degree : ± 4.0

rack travel mm : 11.50
Rated speed rpm : 1195
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : ± 15

rack travel mm : 0.75
Tolerance mm : ± 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 85.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 6.50

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.50
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 700
rack travel mm : 12.50
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.50
Tolerance mm : \pm 0.10

Rated speed rpm : 400

Pressure hPa : 390
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 11.90
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100

M25

Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 198.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.12.94
Test oil : ISO 4113

Combination No. : 0402046865

Injection pump
Pump designation : PES6P120A320LS3321
: -1
EP type number : 0412026776

Governor
Governor design. : RQ275...950PA1085-1
Governor no. : 0421801761

Cust. part No. : 645 625

Customer-spec. information
Customer : RABA
Motor : SIEHE BEMERKUNG

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 168.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 5.90
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 168.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 34.0
tolerance degree : ± 4.0

control lever
position degree : 96.0
tolerance degree : ± 4.0

rack travel mm : 11.30
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1075
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

control lever
position degree : 14.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.90
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 355
Tolerance 1/min : ± 20

Rated speed rpm : 175

CRT mm min. : > 8.50

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.95
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 11.30
Tolerance mm : \pm 0.15

Pressure hPa : 350
rack travel mm : 12.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 995

NO1

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : 5.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 04.10.93

Test oil : ISO 4113

Combination No. : 0402646625

Injection pump

Pump designation : PE6P120A320RS7300

EP type number : 0412626886

Governor

Governer design. : RQV275...1000PA1077K

Governer no. : 0421815358

Cust. part No. : 1280165

Customer spec. information

Customer : DAF

Motor : WS 242 M

Power kW : 242.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 140

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1688901105

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 5.35

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 15.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 275

Rack travel in mm : 6.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.14
Tolerance mm : + 0.20

Rated speed rpm : 1045
guide sleeve
travel mm : 9.83
Tolerance mm : + 0.15

Rated speed rpm : 689
guide sleeve
travel mm : 6.43
Tolerance mm : + 0.25

Rated speed rpm : 284
guide sleeve
travel mm : 2.27
Tolerance mm : + 0.25

Rated speed rpm : 334
guide sleeve
travel mm : 3.08
Tolerance mm : + 0.25

Rated speed rpm : 400

guide sleeve
travel mm : 3.92
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1140

Rack travel in mm : 14.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 119.0
tolerance degree : + 4.0

rack travel mm : 14.00
Rated speed rpm : 1037
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1165
Tolerance 1/min : + 15

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 395
Tolerance 1/min : ± 20

Rated speed rpm : 175

CRT mm min. : > 8.50

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.95
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 14.95
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 14.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 14.40
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 480
Rated speed rpm : 980
rack travel mm : 14.35
Tolerance mm : ± 0.05

Pressure hPa : -
rack travel mm : 12.40
Tolerance mm : ± 0.10

Pressure hPa : 270
rack travel mm : 13.00
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 1037
Tolerance 1/min : ± 8

LOW IDLE

Rated speed rpm : 275
rack travel mm : 6.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.12.94
Test oil : ISO 4113

Combination No. : 0402646651A

Injection pump
Pump designation : PE6P120A320LS7357
EP type number : 0412626934

Governor
Governor design. : RQV325...975PA1190K
Governor no. : 0421815450

Cust. part No. :

Customer spec. information
Customer : LIAZ
Motor : siehe Bemerkung

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1680750089

Outside diameter : 8.0

x inside diameter : 3.0

N08

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.20
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance *NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 725

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1100

Rack travel in mm : 12.20
Tolerance mm : + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 725
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 70.0
tolerance degree : + 4.0

control lever
position degree : 122.0
tolerance degree : + 4.0

rack travel mm : 12.20
Rated speed rpm : 1075
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

control lever
position degree : 14.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.10
Tolerance mm : + 0.30

Rated speed rpm : 225

CRT mm min. : > 5.30

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 725
rack travel mm : 13.20
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : + 0.20

Rated speed rpm : 600
rack travel mm : 12.20
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1500
rack travel mm : 13.20

Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 9.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000

Pressure hPa : 190
rack travel mm : 10.90
Tolerance mm : \pm 0.20

Pressure hPa : 330
rack travel mm : 12.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Check
speed 1/min : $>$ 80
Rated speed rpm : $<$ 245
Check
speed 1/min : $<$ 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.94
Test oil : ISO 4113
Combination No. : 0402646656
Injection pump
Pump designation : PE6P12DA72ORS7264-1
EP type number : 0412626942
Governor
Governor design. : RQ750PA758-14
Governor no. : 0421801659

Cust. part No. : 1370985

Customer spec. information
Customer : SCANIA
Motor : D 11

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1688901104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1680750008

Outside diameter : 6.0

x inside diameter : 2.0

N11

x Length mm : 600

REMARKS

Check and set without ROBO diaphragam

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 310.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 709
guide sleeve
travel mm : 5.50
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : -3.50
Tolerance mm : \pm 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 16.20
Tolerance mm : \pm 0.25

Rated speed rpm : 764
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 820
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 310.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

RATED SPEED

control lever
position degree : 32.0
tolerance degree : \pm 4.0

control lever
position degree : 94.0
tolerance degree : \pm 4.0

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.50
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 13.30
Tolerance mm : \pm 0.20

Pressure hPa : 680
rack travel mm : 15.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

| | | |
|-------------------------------|-----|------|
| Aneroid pressure | | |
| hPa | : | - |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 20.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : ± | 4.0 |
| Check tolerance | | |
| cm ³ /1000S. | : ± | 6.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : | 5.0 |
| Check tolerance | | |
| cm ³ /1000S. | : | 9.0 |

STARTING FUEL DELIVERY

| | | |
|-------------------------------|-----|-------|
| Rated speed rpm | : | 100 |
| rack travel mm | : | 12.50 |
| Tolerance mm | : ± | 0.20 |
| Del. quantity | | |
| cm ³ /1000 strokes | : | 120.0 |
| Tolerance | | |
| cm ³ /1000 strokes | : ± | 20.0 |
| Check tolerance | | |
| cm ³ /1000S. | : ± | 24.0 |

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.94
Test oil : ISO 4113

Combination No. : 04026489288

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0412628886

Governor
Governor design. : RQ300/1050PA1030-9
Governor no. : 0421801717

Cust. part No. : 0230741202

Customer-spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power kW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test Lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3
 : -5-4-1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.30
Check
tolerance *NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.93
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.84
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 732

guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.10

Rated speed rpm : 414
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.10

Rated speed rpm : 540
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 829
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 1098

Tolerance 1/min : + 8
rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 420
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 7.20

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 14.05
Tolerance mm : + 0.10

Rated speed rpm : 950
rack travel mm : 14.20
Tolerance mm : + 0.10

Rated speed rpm : 775
rack travel mm : 14.80
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200

N16

rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.60
Tolerance mm : + 0.15

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : + 0.15

Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1098

Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.94
Test oil : ISO 4113

Combination No. : 0402648928C

Injection pump
Pump designation : PE8P120A320LS7847-2
EP type number : 0412628885

Governor
Governor design. : RQ300/1050PA1030-9
Governor no. : 0421801717

Cust. part No. : 0230741202

Customer spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8-7-2-6-3
 : -5-4-1

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.93
Tolerance mm : \pm 0.10

Rated speed rpm : 1104
guide sleeve
travel mm : 6.84
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 732

guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.10

Rated speed rpm : 414
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.10

Rated speed rpm : 540
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1270
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 829
guide sleeve
travel mm : 6.38
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 99.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 1098

| | |
|-----------------|----------|
| Tolerance 1/min | : + 8 |
| rack travel mm | : 4.00 |
| Rated speed rpm | : 1190 |
| Tolerance 1/min | : + 15 |
| rack travel mm | : 0.75 |
| Tolerance mm | : + 0.75 |
| Rated speed rpm | : 1350 |

LOW IDLE

| | |
|-------------------------------|---------|
| control lever position degree | : 73.0 |
| tolerance degree | : + 4.0 |

Testing:

| | |
|-----------------|----------|
| Rated speed rpm | : 300 |
| rack travel mm | : 5.50 |
| Tolerance mm | : + 0.10 |

| | |
|-----------------|--------|
| rack travel mm | : 2.00 |
| Rated speed rpm | : 420 |
| Tolerance 1/min | : + 20 |

| | |
|-----------------|-------|
| Rated speed rpm | : 200 |
|-----------------|-------|

| | |
|-------------|----------|
| CRT mm min. | : > 7.20 |
|-------------|----------|

TORQUE CONTROL

| | |
|-----------------|----------|
| Rated speed rpm | : 550 |
| rack travel mm | : 14.80 |
| Tolerance mm | : + 0.05 |

| | |
|-----------------|----------|
| Rated speed rpm | : 1050 |
| rack travel mm | : 14.05 |
| Tolerance mm | : + 0.10 |

| | |
|-----------------|---------|
| Rated speed rpm | : 950 |
| rack travel mm | : 14.20 |
| Tolerance mm | : 0.10 |

| | |
|-----------------|----------|
| Rated speed rpm | : 775 |
| rack travel mm | : 14.80 |
| Tolerance mm | : + 0.10 |

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

| | |
|-----------------|--------|
| Rated speed rpm | : 400 |
| Pressure hPa | : 1200 |

N20

| | |
|----------------|----------|
| rack travel mm | : 14.80 |
| Tolerance mm | : + 0.05 |

MEASUREMENT

| | |
|-----------------|----------|
| Pressure hPa | : - |
| Rated speed rpm | : 400 |
| rack travel mm | : 10.60 |
| Tolerance mm | : + 0.15 |

| | |
|-----------------|-------|
| Rated speed rpm | : 400 |
|-----------------|-------|

| | |
|----------------|----------|
| Pressure hPa | : 300 |
| rack travel mm | : 11.90 |
| Tolerance mm | : + 0.15 |

| | |
|----------------|----------|
| Pressure hPa | : 450 |
| rack travel mm | : 12.90 |
| Tolerance mm | : + 0.10 |

FUEL DELIVERY CHARACTERISTICS

| | |
|--|---------|
| Aneroid pressure hPa | : 1200 |
| Rated speed rpm | : 1050 |
| Del. quantity cm ³ /1000 strokes | : 212.0 |
| Tolerance cm ³ /1000 strokes | : + 2.0 |
| Check tolerance cm ³ /1000S. | : + 5.0 |
| Spread Tolerance cm ³ /1000 strokes | : 8.0 |
| Check tolerance cm ³ /1000S. | : 12.0 |

| | |
|--|---------|
| Aneroid pressure hPa | : - |
| Rated speed rpm | : 400 |
| Del. quantity cm ³ /1000 strokes | : 107.0 |
| Tolerance cm ³ /1000 strokes | : + 1.0 |
| Check tolerance cm ³ /1000S. | : + 4.0 |
| Spread Tolerance cm ³ /1000 strokes | : 8.0 |
| Check tolerance cm ³ /1000S. | : 12.0 |

BREAKAWAY

| | |
|-------------------|---------|
| Rack travel in mm | : 13.00 |
| Rated speed rpm | : 1098 |

Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.08.94
Test oil : ISO 4113

Combination No. : 04026489298

Injection pump
Pump designation : PE8P120A320LS7847-3
EP type number : 0412628886

Governor
Governor design. : RGV300...950PA1033
: -12
Governor no. : 0421814093

Cust. part No. : 0230741402

Customer spec. information
Customer : MB-NFZ
Motor : OM402 LA
Power KW : 280.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1417413025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1688901105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Lube oil : 1409918004

Test lines : 1680750075

N22

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 5.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BEGINNING OF DELIVERY DIFFERENCE

Time to cyl. no. : 8

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 239.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

2nd speed rpm : 300

Rack travel in mm : 5.70
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.49
Tolerance mm : \pm 0.25

Rated speed rpm : 1012
guide sleeve
travel mm : 8.56
Tolerance mm : \pm 0.25

Rated speed rpm : 1600
guide sleeve
travel mm : 24.06
Tolerance mm : \pm 0.25

Rated speed rpm : 589
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 639
guide sleeve
travel mm : 5.51
Tolerance mm : \pm 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 6.48
Tolerance mm : \pm 0.25

Rated speed rpm : 1100
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1210
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1045

Rack travel in mm : 13.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 239.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

RATED SPEED

control lever
position degree : 122.0
tolerance degree : \pm 4.0

rack travel mm : 13.00
Rated speed rpm : 998

Tolerance 1/min : + 8
rack travel mm : 4.00
Rated speed rpm : 1095
Tolerance 1/min : + 15

rack travel mm : 0.75
Tolerance mm : + 0.75
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 7.60

CONTINUOUS-ACTION CONTROL

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 14.80
Tolerance mm : + 0.05

Rated speed rpm : 950
rack travel mm : 14.05
Tolerance mm : + 0.10

Rated speed rpm : 900
rack travel mm : 14.10
Tolerance mm : + 0.10

Rated speed rpm : 875
rack travel mm : 14.25
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 14.75
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1200
rack travel mm : 14.80
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.60
Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 300
rack travel mm : 11.90
Tolerance mm : + 0.15

Pressure hPa : 450
rack travel mm : 12.90
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Check
speed 1/min : > 80
Rated speed rpm : < 220
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 214.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 998
Tolerance 1/min : ± 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.30
Tolerance mm : ± 0.25
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 20.0
Check tolerance
cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0